Facts and Fiction About
The FLYING SAUCERS
AS REPORTED BY
THE MEN WHO SAW THEM!
V-173
U.S NAVY

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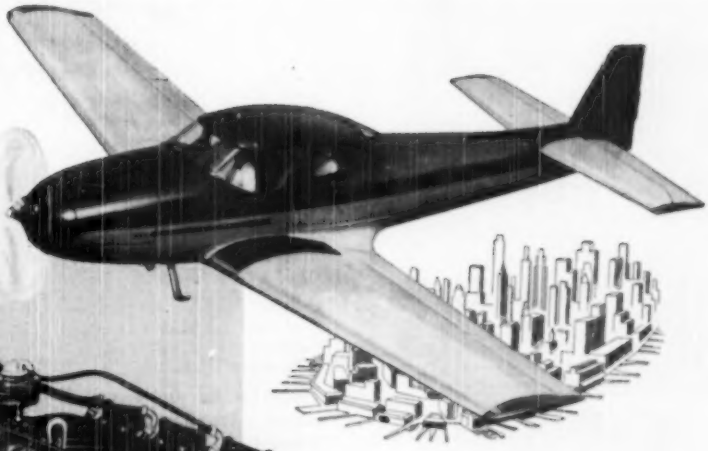

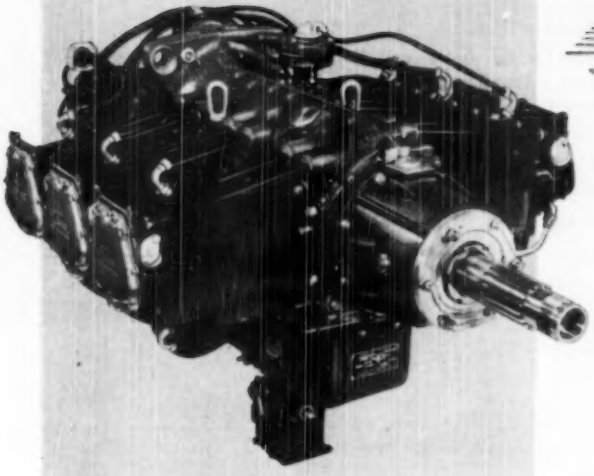

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THE COVER: Is the Chance Vought V-173 a "flying saucer" prototype, as some writers claim? FLYING's own "saucer" researches indicate that all evidence is against it.

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FLYING

JULY • 1950

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THE MAIL BOX

ONE MAN AT THE CONTROLS

Possibly you can settle an argument. . . . A friend of mine recently said that it is impossible to fly a four-engined aircraft with only one man at the controls.

I disagree with him. For instance, during the last war I believe England used only one pilot on their heavy four-engined bombers, such as the *Halifax*.

Am I right?

WILLIAM DEANGELIS

Pittsburgh, Pa.

● You win hands down. There is no position for co-pilot in either the British *Halifax* or *Lancaster* bombers. The only time a second pilot was carried during the war was to provide operational training experience—but not raid experience. One *Lancaster* pilot summed it up neatly: "If a pilot couldn't control a *Lanc* by himself, it was time to bail out . . . but quick!" It is a well-known fact that the Boeing *Flying Fortress* was piloted a number of times during the war by only one pilot when all other crew members capable of flying the airplane were killed or seriously injured. According to Boeing, "both the B-29 and B-50 could, conceivably, be taken off, flown and landed by one man—a good one."—ED.

THAT HYPNOSIS ARTICLE

Three cheers for Hy Sheridan's article "Hypnosis in the Cockpit" [May FLYING]. Not only have I experienced the very same thing, but I have known one moment when it was almost the validation of my passport to the next world.

I have scheduled a reading of part of this article at our next meeting of the 337th Res. Tng. Sqdn. at Mitchel AFB . . .

CAPT. ROBERT L. SCHENCK, USAFR

Great Neck, N. Y.

. . . This article supports a theory that I have had for a long time—the hardest part of night and instrument flying is trying to keep from being hypnotized by the instruments. I reached that conclusion during the war after noticing that after being on the gauges for a while I would find myself watching one instrument and letting the others go. My flying would get pretty sloppy and the sad part was that it didn't seem important until I'd think about it afterward . . .

Since then I've noticed the same effect while flying lightplanes. Things seem *so right* that a little thing like gliding right onto the runway without flaring out doesn't cause any concern at all.

As Hy says, there isn't much chance of this when things are rough, but when the nights are black as velvet and twice as smooth, it happens all the time . . .

SILAS H. WELLMAN

Niagara Falls, N. Y.

My wife was listening to the radio the morning Arthur Godfrey recommended that everyone read "Hypnosis in the Cockpit" in FLYING's May issue. . . . I can see why Godfrey was so enthusiastic.

Almost every pilot has had similar experiences, especially during night flights. However, this is the first time I've ever seen the subject explored in print. Hy certainly knows what he's talking about . . .

CHARLES E. FULMER

Los Angeles, Calif.

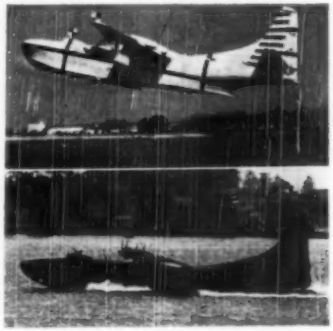
● Since the May issue hit the newsstands, FLYING has been deluged with letters from pilots all over the world. The majority of these letters (over 100 to date) tell of similar experiences with cockpit hypnosis. Because this long-neglected subject is of extreme importance to every pilot, the August issue of FLYING will feature a number of these personal-experience accounts.—ED.

THE REAL THING

The plane shown on page 8 [May FLYING] is not the "60-ton Convair XP5Y-1 making its maiden taxi run" as you claim. It's only a model plane. . . .

HOMER HICKMAN

Seattle, Wash.



● No, look again. The plane pictured in the May issue (see bottom photo) was the full-size XP5Y-1. The model XP5Y-1 (top photo) was shown in FLYING's September issue. We'll admit that, even after close scrutiny, it's hard to tell which is which.—ED.

MY ANSWERS A FEW

Dear Mr. Sheridan:

Maybe you can answer this one. How can a man of average income indulge in flying and still feed his wife and offspring? Let's face it. The airplane is almost as old as the automobile, yet I have owned a car for years (the same one) and can't afford to fly once a month . . .

KEN HANNUM

Willoughby, O.

● The high cost of flying has bothered us all for many, many years. There isn't much mystery about it. The automobile

(*Continued on page* 63)

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WRITE TODAY... for special information about CAL-AERO'S brand new JET ENGINE CAREER COURSE—Get ready NOW and keep pace with the new advancements in Aviation's fast changing world—Military jets are here now—commercial JETS soon will be. Abundant opportunities, for trained JET MECHANICS, are developing in the vast expansion of this new field of propulsion. Ask yourself, "What other school can offer this specialized JET CAREER COURSE, complete with test cell and live jet engines to study and work on?" The answer,—"Only CAL-AERO." Prepare yourself NOW—get in on the ground floor. Approved by the State of California, Department of Education.

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HIGH SCHOOL ATTENDED ZONE STATE
GRADUATED YES ☐ NO ☐
Check one: ☐ Veteran ☐ Non-Veteran
F-7

NOTES ON CIVIL FLYING

Props at High Speed

Propellers may be efficient at 600 m.p.h. despite fact that a few years ago engineers had been discounting them for speeds faster than 450 m.p.h. Hamilton Standard engineers have returned to the square-tipped rectangular-shaped blades, but made as thin as possible.

Airborne Motorcycle

World's smallest motorcycle is 90-pound midget built by Jimmy Calonico, a young garage manager for a Ford dealer at Gustine, Calif. Calonico carries it in his Aeronca *Chief* and uses it to commute from airports. It has a Harley-Davidson 125 engine, pneumatic tires, kick-starter, three-speed transmission, clutch, brakes, generator, hand throttle. Because of low gear ratio it has top speed of only 50 m.p.h.

3,000 Hours on a 'Copter

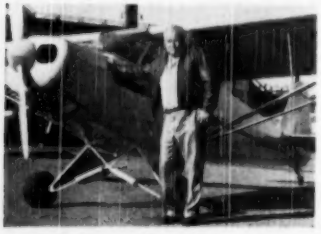
Los Angeles Airways has flown a Sikorsky S-51 helicopter more than 3,000 hours—the first helicopter in the world to fly that long.

Grand Central Expands

Grand Central Airport Co. has leased the huge facilities at the Tucson (Ariz.) Municipal Airport, formerly operated by Convair to modify *Liberators* during the war. The facilities have been acquired to permit the company to bid on maintenance and overhaul of larger planes than its hangars or runways at Glendale could accommodate.

Loop Record

Carl Crawford, Tulsa, Okla., set a new world record in April by completing 1,874 non-stop loops in a Piper



Super Cub. This beats the 1928 record of the late Speed Holman who set 1,633.

Paradox

John Geisse, who has been an expert on personal aircraft in the CAA for many years, recently received a medal for meritorious achievement and service from the Department of Commerce. Shortly after, CAA fired him.

Helioplane Price

The first four-place *Helioplane* will probably be ready in August or September and will sell for $7,000 to $9,000, according to Dr. Lynn Bollinger, chairman of the board of directors of Helio Aircraft Corporation. Marketing plans call for offering purchasers a repair and maintenance service guarantee similar to that used in the home television field.

Turn to the British?

Civil Aeronautics Board is launching a special study on jet transports. Teams of experts will visit factories turning out jet warplanes and jet engines. Some CAB officials believe that if a suitable American jet transport is not on the market within the next two years domestic airlines may have to turn to the British jets.

Colonial's Record

When it recently set its record of operating 20 years without a fatality or serious injury to passenger or crew member, Colonial Airlines had flown 310,276,067 passenger miles, and completed an estimated 455,000 landings and take-offs.

Four-Engined Feederliner

DeHavilland *Heron*, new small four-engined British feederliner, will carry

14 to 17 passengers and is based on the de Havilland *Dove*. With payload of 3,420 pounds, the *Heron* has a still-air range of about 400 miles. First version will have fixed gear and will cruise 160 m.p.h. on 60 per cent take-off power at 8,000 feet.

File Flight Plans

Increasingly close control over civil flying may be in offing if war jitters continue. While it is not yet mandatory that pilots file flight plans in restricted and prohibited areas, they are subject to interception by Air Force fighters if they do not. First area in which pilots were "urged" to file flight plans was announced February 28, and covers Los Alamos (New Mexico) defense area, and flights from 20 miles or more to seaward along the Atlantic Coast from Limestone, Me., to Norfolk, Va. Flying over Los Alamos, of course, is illegal but now flights within 172 miles of Los Alamos at altitudes of more than 10,000 feet msl, or 4,000 feet above the terrain, are subject to interception. On April 28, the order was extended to cover southbound flights crossing the Canadian border east of Lake Michigan, and the new northwest air defense area from North Bend, Ore., to Ontario, Ore., northeast to Superior, Mont., north to the Canadian border, westward along the border to the Pacific, and south along the coast to North Bend. If you want to be sure to keep out of trouble, file a flight plan.

The First Stewardess

Twenty years ago last May, Boeing Air Transport, predecessor company of United Air Lines, hired the first airline

stewardesses. The proposal was the idea of Ellen Church (top row, left), a nurse at French Hospital in San Francisco, later a stewardess, and now director of nursing service, Sherman Hospital, Elgin, Ill.

No Cessna Twin

Cessna has no plans to build a large twin-engined airplane for the Army Field Forces, despite rumors to the contrary.

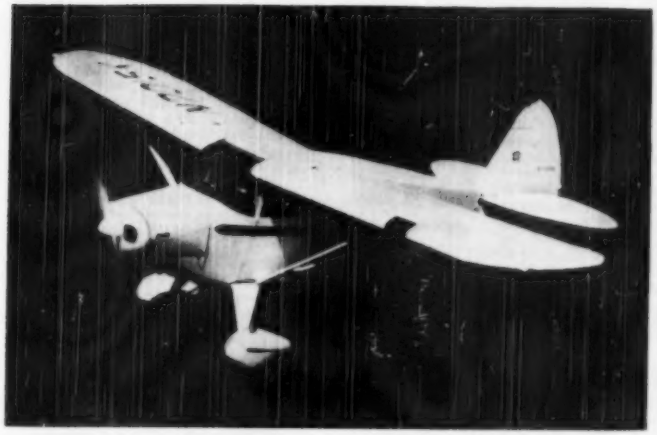
Variable Sunglasses

New sunglasses manufactured by Pioneer Scientific Corp., New York, use polaroid lenses which are adjustable. Movable tabs on under side of frames permit wearer to vary amount of light.

Navigation Aid

Grimes *Navigator* is new flight instrument which will "track" aircraft on a cross-country flight. *Navigator* converts time to distance. At any point en route the pilot may read direct from the instrument the ground miles flown.

2 PIPER PLANES Unmatched for Price and Performance



The FOUR-PLACE PIPER PACER

For both price and performance the new 1950 Piper Pacer can't be matched. For the same price as most two-place ships, here's a fast, far-ranging four-place plane built by the world's largest manufacturer of personal planes.

You cruise as fast as 134 mph* in the new Piper Pacer with four people in the comfortable, sound-proofed cabin. Wheel controls, a rear seat readily removable to provide 36 cubic feet of cargo space, front and rear doors and the Piper Hydrasorb landing gear are among the outstanding advantages of this amazing airplane.

*Model 135 at 5,000 feet with controllable prop.

These features, all at such a low price, are equalled by the Pacer's flight performance which combines the typical flying ease for which Piper is famous with a solid, big-airplane feel so restful on long flights. The Model 115 with the economical Lycoming 115 hp. engine has many improvements over last year's sensational Piper. The Models 125 and 135 have 125 hp. and flaps for even more nimble performance. Your dollar buys twice as much with the Pacer. Fly it and be convinced yourself. Write for brochure—Dept. FL-7.

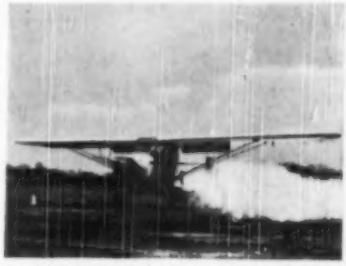
Pacer prices start at **$3,295**

(For Model 115—115 hp.)

SUPER CUB

takes off and lands shorter than any plane available

"BREATH-TAKING" describes the Super Cub's short field performance, unmatched by any plane in production today. With optional tandem-wheel gear it lands safely in very rough fields. Model "95" has 90 hp. Model "105" has 108 hp. and flaps; can fly as slow as 33 mph. Cruises at 105 mph.



THE SUPER CUB is the best agricultural plane ever produced. Rear seat is readily removable to carry bulky farm freight. Factory-equipped with dust or spray equipment if desired, "105" can easily carry its own weight in chemicals. Super Cub prices start at $2795.

YOU CAN'T MATCH THE PACER FOR LOW COST FLYING!

Both direct and indirect operating costs are far lower in the Pacer because it provides better than two-mile-a-minute cruising speed on 125 horsepower and costs several thousand dollars less than other four-place planes of similar performance. This means that four people can travel in the Pacer at less cost than for bus fare, including all expenses. For the charter operator the Pacer can be operated profitably at attractively low rates which guarantee good volume. Yes, the Pacer is the first personal airplane which combines practical performance with real economy.

PIPER
AIRCRAFT CORP.
LOCK HAVEN, PA., U. S. A.

MILITARY NEWS

. . . **A four-engined B-47** being built by Boeing will have more speed and range than present six-engined Stratojet versions. The new bomber (designated YB-56) will be powered by four Allison J-35-A23 engines (each rated at 9,700 pounds thrust!).

. . . **The House** boosted the military budget by $383 million, giving $200 million to the Air Force (enabling purchase of 77 additional planes and modernization of 299 others). It gave $100 million more to the Navy (enabling purchase of 95 more planes). As FLYING went to press, Senate still had to approve additional funds, but there was little likelihood the upper chamber would balk at the increases.

. . . **Unconfirmed reports** indicate the U. S. may have "baby" A-Bombs small enough to be carried in fighter-bombers like the Republic F-84E.

. . . **Posted** in operations, MacDill AFB: "This is an order. Due to the shortage of personnel and the fact we have run out of Forms 14 and 14A [accident reports], there will NOT be any more accidents!"

Jumbo-sized tailpipes on Northrop F-89 house afterburners. They'll greatly increase the interceptor's rate of climb.

. . . **Vice Admiral** John D. Price, former vice-chief of Naval Operations, has relieved Vice Admiral J. W. ("Black Jack") Reeves as chief of Naval Air Training. Admiral Reeves, who is retiring, recently accepted position as head of Los Angeles airports.

. . . **Famous North American B-25** (Billy Mitchell) bomber has been redesigned as a twin-engined trainer. North American proposes four versions: a pilot trainer, administrative personnel transport, radar bomber trainer and navigation trainer. Main structural change is enlarged and lengthened fuselage nose section, giving more cockpit space and additional seats.

. . . **New Air Secretary,** Thomas K. Finletter, is expected to be as staunch an airpower advocate as his predecessor, W. Stuart Symington, who has moved over to chairmanship of National Security Resources Board.

Finletter

It was Finletter's commission in 1947 which first enunciated goal of 70-group air force.

The 56-year-old New York lawyer was never a pilot; in fact, he was never associated with aviation until he began the 1947 commission hearings. Like the man who appointed him, he was a captain in the Field Artillery in World War I.

A teetotaler, he is a prodigious coffee drinker and almost a chain cigarette smoker.

Impatience, stemming from a quick mind, is a Finletter characteristic. He expects quick outlines of problems. He listens, speaks his mind, and then shuts up. The Air Force brass who come to him unprepared are likely to find the Secretary busily toying with other, more pressing matters within a few minutes.

A liberal Democrat and an expert in the field of international economics, Finletter once served as special assistant to Secretary of State Cordell Hull; has lately been associated with ECA in London. He has organizational ability, and has a tendency to delegate authority—perhaps too much at times. He proceeds calmly, without fuss or feathers.

"People work with him, not for him," says one of his old associates in the Finletter Commission.

. . . **Reliable reports** indicate Russia is building a radar network and rocket projectile control stations along Germany's Baltic coastline.

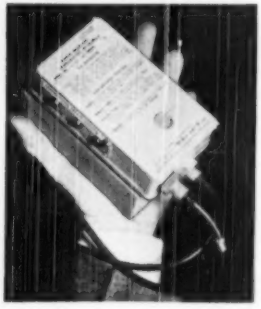
. . . **RAF fighter strength** is scheduled to be doubled this year. Under North Atlantic Treaty, Britain and France have main responsibility for tactical air power in Europe. France has produced few outstanding jet craft but the RAF has some of world's best jet interceptors. RAF reportedly has 100 jet squadrons (now being increased from eight to 16 planes). U. S. maintains only about 150 fighter planes in Germany.

. . . **Two 230-gallon** fuel tanks mounted on bomb shackles under wings of F-84E increase Thunderjet's operating radius to "over 1,000 miles." That's roughly a range of 2,500 miles. The F-84E also carries a pair of 230-gallon wingtip tanks. All tanks are droppable.

. . . **Overseas note.** "It is said, though there is no official confirmation, that the U.S.A. is proposing to give up the manufacture of long-range bombers and to concentrate upon the expendable, pilotless, turbine-engined aircraft. . . . Hitherto, it has been supposed that a crew is needed for the launching of an atomic bomb, but it seems that that is no longer so, and that an atomic bomb can now be arranged as the warhead of a pilotless missile." **From the Manchester (England) Guardian.**

. . . **Antiaircraft rockets** that can shoot down a plane flying at 60,000 feet, have been developed says Gen. J. Lawton Collins, Army chief of staff.

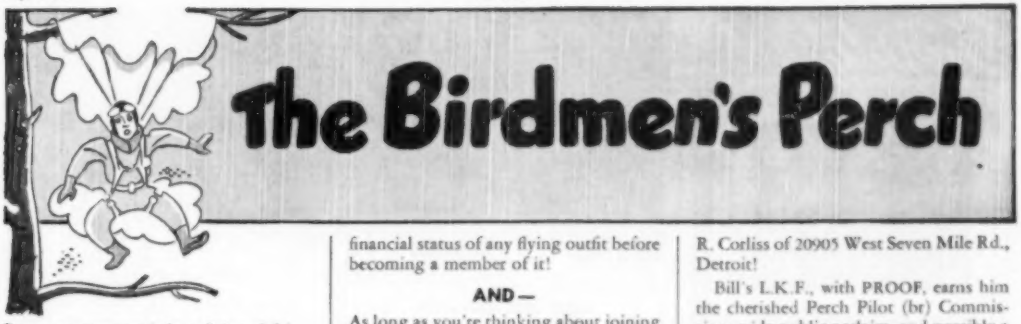
. . . **Replacement** for old, curvaceous 40-pound "Gibson Girl" is a miniature battery-operated air-sea rescue transmitter-receiver. The new set (known



as URC-4) can be held in one hand (see cut). It operates on two channels, VHF and UHF, and can send and receive voice and code signals.

. . . **Air Force** has fewer college graduates among its regular officers than does Army or Navy. Forty-three percent of Air Force regular officers have college degrees, compared with 75.4 percent in Navy and 73 percent in Army.

. . . **Convair** has developed an engine nacelle carrier (see above) which is hung externally from a B-36's bomb bays during flight. With the carriers, a B-36 can haul four of its own spare power plants.



So—you wanna join a flying club!

That's a fine, high-type ambition! But, whether you're considering the Amalgamated Flying and Chowder Club, or the

Peerless Pilots of Ptomaine Society, check these two points carefully:

(A). Is the club an incorporated club?

(B). Does it carry adequate insurance?

In an *unincorporated* club, should one of the "tried and true" ruin a farmer's barn, *you* could be held personally responsible for damages awarded by a court against the club!

If your club fails to carry adequate insurance, one expensive accident could bankrupt the organization!

For your own protection, check the financial status of any flying outfit before becoming a member of it!

AND—

As long as you're thinking about joining things, join the endless parade of plane-happy pilots who wouldn't consider taking off without a crankcase full of Gulfpride Aviation Oil—Series D!

It's a super-duper lube, the world's finest detergent dispersant oil for horizontally opposed engines!

And, this is important. Gulfpride Aviation Oil—Series D—is the only aviation oil put through Gulf's exclusive Alchlor process to remove those extra carbon and sludge formers.

No wonder rings and valves stay free longer! No wonder pilots increase the periods between overhauls up to 100%!

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LITTLE KNOWN FACTS DEPT.

How many times have you said to yourself, "Gee, I wisht I was famous!" Well, you can be, Pal, if you'll only read and take heed!

Today we doff our hats to a spectacular citizen of the "Motor City," Mr. William R. Corliss of 20905 West Seven Mile Rd., Detroit!

Bill's L.K.F., with PROOF, earns him the cherished Perch Pilot (br) Commission, wide public acclaim, and possibly a grand increase in salary if he shows this to his boss:

The Lockheed F-90 Fighter not only has two engines, but duplicate sets of controls and navigation instruments, allowing it to sustain direct hits and still return to its base!

Whammy, Bill, that's a good one! Your Commission's on the way. As for the rest of youse chaps . . .

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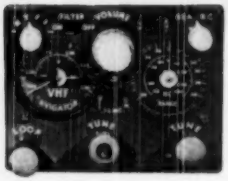

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3. Rotate parallel lubber lines to align with indicator pointer.
4. Read your course to station at apex of lubber lines marked 'TO'.
5. Fly heading indicated by 'TO' pointer—keeping indicator needle aligned with lubber lines to correct for drift and compass errors.

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Flying Farmers, U.S.A.

MEET BILL RENSHAW

When FLYING asked Bill Renshaw to write a monthly column on Flying Farmer activities, he asked one question: "Can I use the column as a double-edged sword to fight for better flying for these folks?"

The answer was yes—and with this issue of FLYING, Bill starts a column that he promises will contain "fireworks" in the near future.

A word about Bill. Born and raised on a farm in Southern Illinois, he has spent the past 30 years on the staff of America's oldest farmpaper, the *Prairie Farmer*. He flies his *Ercoupe* about 300 hours a year in his work, and perhaps knows more Flying Farmers by their first name than any other man in America.

In future issues, he'll tell the story of one of America's most active flying groups—the expanding membership of the Flying Farmers associations. Today there are over 20,000 Flying Farmers in 38 states—in the next few years, predicts Bill, that number will swell by thousands.

Flying Farmers everywhere will doff their flying caps to the College of Agriculture at Ohio State University. They'll soon offer a new course called "Use of the Airplane on the Farm." It's believed to be the first course of its kind in the country.

★ ★ ★

ACTION! CAMERA!

I'm always amazed at the number of moving picture cameras that grind out film at Flying Farmer shindigs. I asked one farmer who was shooting Kodachrome like mad if he didn't find two pastimes—flying and movie-making—a little expensive. He laughed. "Flying's necessary to my business," he said. "Movies are my *hobby*!"

★ ★ ★

Speaking of movies, 105 flying farmers found room in their baggage compartments for moving picture cameras on the latest flight to Pensacola. When those movies are thrown on screens back in the hinterlands, they'll sell a lot of farmers on the notion of taking to the air.

★ ★ ★

HE'S SELLING FLYING

Walter Kimble of Paris, Ill., believes in selling flying to his neighbors. In a recent 30-day period, he showed homemade flying movies at seven different meetings. But most important, Kimble (who is secretary of the Illinois Flying Farmers) isn't "preaching to the deacons" with his movies. All seven showings were to non-aviation groups. He says the best interest-getter is a film he shot last summer on a flying farmer junket to Pensacola.

CHICAGO-BOUND

Flying Farmers by the thousands are expected to descend on Chicago June 29 and 30. The big attraction will be an elaborate dedication of Meigs Field (Lake Front Airport). But other events will also be held. The National Flying Farmer Association will hold a directors meeting at the Stevens Hotel in Chicago on June 29. This meeting should attract a scattering of planes from all over the nation.

Also, to help bolster attendance, Flying Farmers of Illinois, Indiana, Michigan and Wisconsin have advanced their annual Field Day by a month. They'll fly into Glenview Naval Air Station on the morning of June 30. They'll hold a brief meeting there, and then proceed by convoy to Meigs Field. Other Flying Farmers will land at O'Hare International Airport from which they'll be taken by cars to downtown Chicago.

June 30 will also be Flying Farmer Day at the Chicago Fair of 1950.

★ ★ ★

HOW TO SELL PLANES

Herman Rinkenberger (Bradford, Ill.) operates a strictly rural airport and a large farm—and he makes a lot of business trips by air. He never makes a flight with an empty seat. When a trip's in the making, he phones neighbors who

expect to travel the rest of their lives on the ground. Hundreds of auto drivers have flown with him, dozens have come back for flight lessons, and many have asked him to sell them a plane. "Sell *flying*," Rinkenberger says. "Sell it well; and they'll buy airplanes."

★ ★ ★

It's unfortunate that many states still refuse to list rural landing strips on State Aeronautical Charts because the fields don't reach certain required minimums. Maybe they haven't heard that "any port looks good in a storm!"

I can name dates and places in Indiana where pilots were able to avert crashes by locating nearby farm strips on the STATE CHARTS. Why shouldn't all State Aeronautical Departments list the strips? I'd like to hear from private pilots, flying farmers and others on this subject.

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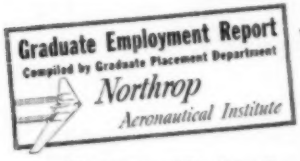

YOU CAN SEE THE RECORD OF NORTHROP GRADUATES "in black and white"

The current "Graduate Employment Report," compiled by the *Graduate Placement Department* of Northrop Aeronautical Institute, lists hundreds of Aeronautical Engineering graduates and the employers with which they were placed over an 18 months period. Here is a printed record of the constant demand for *Northrop*-trained men throughout all *Aviation.*

Aeronautical Engineering may be YOUR answer

The *"Employment Report,"* described above, and the big, heavily illustrated *Northrop* catalog will give you abundant details for consideration of *Aeronautical Engineering* as a career field. Here is full information on opportunities, types of duties, qualifications, and training.

SEND COUPON FOR REPORT AND CATALOG

Read these typical reports of graduates now profiting from their Northrop training*

- *Paul B.:* "I am employed in Rocket Motor Design."
- *K. A. S.:* "I went to work the first Monday after graduation as an Experimental Technician in fuel cells."
- *Edward W.:* "I was hired immediately upon graduation. During the two years I have had several raises and a promotion. I am now working directly with the Project Engineer, in the new airplane Project Group."
- *Frank M.:* "Gene M. and I have been here at the Proving Ground for three weeks now. We have seen missiles and the V-2 rocket fired." (These two men were assigned to guided missile research as their first positions after graduation from Northrop.)
- *Douglas E.:* "I am in the Stress Group. My first job was to design the loading jigs for applying the torque loads in the (name of aircraft) static test."
- *Melvin H.:* "N.A.I. has an accurate idea of what is required of the new engineer. The practical end of our training has shown itself in a number of ways. Those of us with our technical school background have a definite edge in our work."
- *Allen B.:* "A wire offering immediate employment arrived a week after the interview. I am in Engineering Design."
- *Robert B.:* "I wanted to let you know how much I appreciate your help in securing this position. I work in the Missile Flight Test and Analysis Department."

*Names abbreviated here out of respect for personal privacy. Record on file in N.A.I. Graduate Placement Department.

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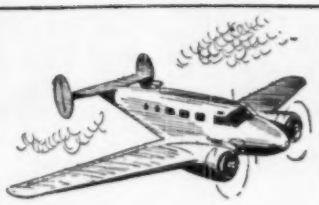

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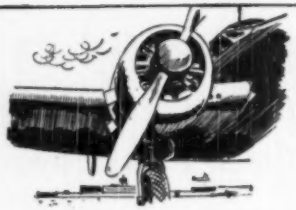

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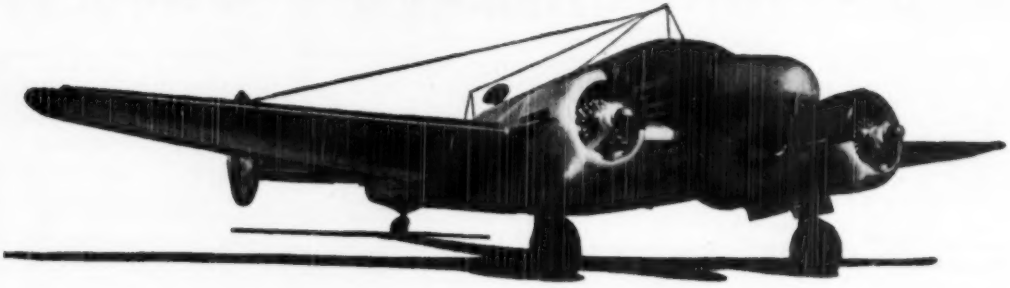

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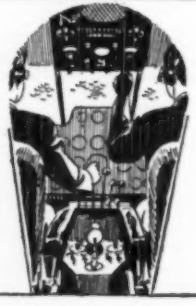


And it's the choice of pilots. Extremely efficient instrument and control layout, with major operating units conveniently located on central pedestal.

FLYING
VOLUME 47, NO. 1
JULY, 1950

WANTED: 180,000 SPOTTERS

By
RICHARD E. SAUNDERS
Washington Editor of FLYING

Radar alone can't give U.S. enough warning of sneak air attacks. That is why the Air Force is organizing 9,000 civilian lookout posts in a 25-state aircraft spotters network.

THE NORTHERN BORDERS and coastlines of the U.S. will soon be protected by a civilian army of aircraft spotters 180,000 strong. Under Air Force auspices, a 25-state organization is being set up to operate during emergencies and during armed forces exercises and maneuvers.

By fall, the network should be able to protect the nation against surprise attack. Civilians in 9,000 lookout posts will supplement the present grossly inadequate radar screen.

Actual recruiting will be handled locally, by states and municipalities. State Governors will organize the lookouts, and will operate under Air Force direction which in turn is coordinated with the National Security Resources Board. Radar outposts of the Air Force will be integrated with the network, and defending Air Forces of the nation will be linked to it by direct communications. In time of war, the organization would become a direct auxiliary of the Air Force.

These spotters won't be plane identification experts. In fact, the Air Force won't ask them to spend time memorizing aircraft silhouettes. Today's bombers and fighters fly so high and so fast—and attack so often at night—that key officers believe it's useless to train civilians on the fine points of identification.

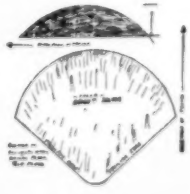
But the supervisors and crews being mobilized right now are asked to volunteer to man their posts on a 24-hour basis whenever the Defense high command believes it necessary. If possible, 20 persons will be recruited for each station, to give a safe (Continued on page 56)

ARTIST'S CONCEPTION
BY JULIAN S. KRUPA

Passengers aboard a TWA airliner near South Bend, Ind., witnessed a strange sky phenomenon in April. It had a bright red color, and appeared to fly on edge like a wheel. "It looked something like a spinning exhaust, all aflame," said Passenger Jacob Goelzer.

KENNETH ARNOLD

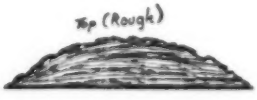
Idaho businessman-pilot attracted nationwide attention in 1947, with his reports of "flying discs" seen over the Cascades. All but one of discs Arnold saw were shaped like the drawings below.



1947

CAPT. E. J. SMITH

United Air Lines captain saw nine strange objects in air near Emmett, Idaho. Sketch below by Kenneth Arnold is based on Smith's description of the objects. Note similarity of profile with that on the left.



1947

THE FLYING SAUCERS— FACT OR FICTION?

By CURTIS FULLER
Editor of FLYING

When observers as experienced as airline pilots say they've seen strange objects in the sky, they deserve a respectful hearing.

THE night of March 31, 1950, was dark and clear. The Chicago and Southern Air Lines DC-3 had taken off a short while before from Memphis airport for a regularly scheduled flight to Little Rock, Ark. Off in the distance Capt. Jack Adams, 31, a veteran of 7,000 hours and seven years on the airline, could see the glow of lights that meant Little Rock, 40 miles away.

"There was only a small piece of moon showing," Adams said. "Our altitude was about 2,000 feet. Visibility and ceiling were unlimited. We could see 20 or 30 miles easily."

In the right hand seat was Co-Pilot G. W. Anderson, Jr., 30, a 6,000-hour veteran. Anderson and Adams knew the route perfectly, had flown it many times together.

At exactly 9:29 p.m. Adams' attention was caught by a lighted, fast-moving object. "My God, what's that?" he asked.

Anderson looked up. "Oh no, not one of those things!" he said.

Unfortunately for his peace of mind it was "one of those things."

The editors of FLYING have followed and investigated reports of "those things" for just short of three years—ever since Kenneth Arnold, a businessman-pilot and himself a contributor to FLYING, started the great modern flying saucer controversy on June 24, 1947.

Since then we have talked with men who believe they have seen flying saucers, with men who are equally sure they haven't, with Air Force investigators, with psychologists. For nearly three years no editor of FLYING has visited an Air Force base or talked with an Air Force officer without asking "What do you know about the flying saucers?"

The results, as you may suspect, have not been very fruitful. The answer has almost invariably been an unyielding:

"There isn't any such thing."

And yet in the minds of the editors there has always remained an unsatisfied, nagging doubt. If there isn't any such thing, what did Captain Jack Adams and First Officer G. W. Anderson, Jr., see?

Up to the time of issuing its first report about a year ago, the Air Force's Project Saucer had investigated 240 domestic and 30 foreign saucer incidents. FLYING has in its own records reports of more than 40 saucer sightings.

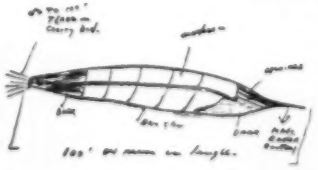
Most of the reports are from crackpots and come under what psychologists call "hallucinatory phenomena." But the crackpot reports do not detract from the validity of reports from qualified observers any more than the existence of medical quacks proves that trained doctors are also quacks.

We have in our files enough material to write a book on flying saucers—a strange compilation, indeed, of "things that don't exist." Several (*Continued on page 59*)

AIRLINE PILOTS' OWN SKETCHES OF WHAT THEY SAW

CAPT. C. S. CHILES

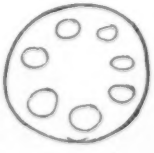
The strange object seen by Eastern Airlines' Capt. Chiles is the only one reported by airline pilots that had the traditional rocket shape and appeared to have jet exhaust.



1948

CAPT. JACK ADAMS

C.&S.'s Pilot Adams would not swear that the ship he saw had circular shape indicated, but the circular arrangement of "portholes" seemed to indicate that it was a disc.



1950

CAPT. ROBERT ADICKES

Imagine a disc, 10 to 20 per cent as thick as it was round and the size and color of an orange at 20 feet —that describes the object observed by TWA's Adickes.

1950

SWARMER

Exercise Swarmer pitted U.S. troops in airborne operation against "aggressor" army. On D-Day, about 4,000 paratroopers jumped into action from 40 Fairchild C-82's and from 45 C-119 troop carrier planes. Supporting equipment (howitzers, jeeps, trailers and ammunition) was also dropped. The exercise involved 675 planes of all kinds and 60,000 men. About 198 transports were used for the air lift.

By R. O. TOWNSHEND

FOR the past four years a tough unscrupulous "enemy" has been battering at our doors. Sometimes he actually crashes through and establishes invasion bridgeheads in the United States, Alaska, Hawaii, or Puerto Rico.

Only the full armed strength of the United States is able to dislodge him. But he is persistent. He always comes back for more.

His name is "Aggressor."

Aggressor has everything a *bona fide* enemy should have. He has his own homeland, his own language. His troops wear a distinctive dark green uniform. His warplanes have their own insignia, his officers special markings of rank. He even has a spy net in the United States and a controlled news service to report his invasion activities and combat the distortions of the "capitalistic American press."

Our military leaders can't get along without Aggressor. Even though all Aggressor forces are also United States troops playing the part of a make-believe enemy, they have become a valuable aid to U.S. military maneuvers. Aggressor is an indestructible sparring partner who provides much-needed realism in war games. Every effort is made to give Aggressor a personality of his own—even to leaflets showered down upon U.S. forces promising that "AGGRESSOR TREATS PRISONERS RIGHT."

In late April and early May, Aggressor made his latest foray against the United States. The operations, known as "Exercise Swarmer," gave defending troops the opportunity to test large scale airborne assault operations—and especially to test the feasibility of establishing and maintaining an independent airhead completely by air.

If "Operation Vittles" could keep the city of Berlin with its 2,000,000 people operating, it was argued that a similar airlift job could supply an isolated airborne force landed in an enemy pocket. Once established, Swarmer further was to test whether the airhead could be built up by air to the point where it could expand and crush the surrounding enemy against other U.S. contingents on the outer edges of the pocket.

Here was the problem: Aggressor had had two previous invasion attempts sealed off in Florida and on the Alabama coast. But now, through air and submarine landings on the lower North Carolina coast, Aggressor had obtained a strong foothold. He then proceeded to exploit his gains by pushing up toward the Winston-Salem industrial complex. He might even be headed for Washington.

Task Force Swarmer was assigned to halt Aggressor. It had to fly through territory occupied by a simulated enemy and so needed an umbrella of fighters at all times. First step in carrying out the operation was to secure U.S. air superiority in the area. Without such superiority, an airhead would be too risky to attempt.

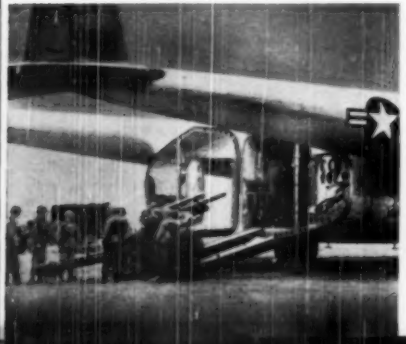
For a week before D-Day, the Tactical Air Force gave the enemy a thorough working over. B-45's dropped 523,000 pounds of bombs. Fighter-interceptor groups flew more than 400 sorties. By (*Continued on page* 63)

Airborne exercise shows need for strengthened tactical air force, more troop transports.

Enemy General Staff wore distinctive Aggressor uniforms. Officers are Maj. Gen. Robert M. Lee, commanding the Aggressor forces, Col. Harry Viccellio, Comdr. C. E. Dickinson (Navy), and Col. Harry Henry.

Paratrooper poses with new jump equipment. He carries general purpose bag, 60-mm. mortar and life preservers. After chute opens, equipment hangs 20 feet below him. It hits first, reducing the landing shock.

Loading howitzer in C-119 transport, soldiers of 82d Airborne Division prepare for mass drop.



Light tank is driven into a huge Douglas C-124 in demonstration prior to the all-air maneuver.

Trailer is trundled off plane at airhead. The exercise showed unloading methods are too slow.

PILOTS WHO BUZZ ARE BORN

Psychologists say that some buzzers are really trying to die. The others are immature show-offs. In either case they cost you money, endanger your life, and give flying a bad name.

TO DIE

★

By HARLAND WILSON

★

LATE ONE SUNDAY AFTERNOON in May, 1949, Hunter Lyon, owner of a stock breeding farm on Palmetto Road outside of Miami, Fla., was walking across his pasture when he heard a familiar sound. It was the high-pitched whine of a lightplane engine in a dive. Lyon instinctively ducked because he had heard the same noise the previous Sunday and knew what to expect.

"The pilot cut off the engine just a few feet over my barn," Lyon said later, "and the plane darted down as if it were going to light in my pasture. I was only about 100 feet from the plane and it was flying not over six or eight feet off the ground. It suddenly gunned and rose up over my Australian pine hedge and telegraph wires, just missing the wires, and then circled over the Tropicair open air theater.

"The plane climbed at a steep angle. For a time it looked as if it would slip back [whipstall], but through some act of God the plane righted itself."

God was not able to help the second time. Lyon continued . . . "It then swooped back over the wires of my pasture, just missing the barn and headed west. I thought at the time that they [the occupants] had come so close to having an accident that they were through, but they circled and came back the same course, coming down low over my place, nearly striking one of my horses, and immediately climbed over one of the telegraph wires and then darted over the paved area of the theater. The plane then shot upward approximately 150 feet in the air. But instead of stalling, it suddenly turned completely forward, nose-down, and dove right into the ground."

Members of a clean-up squad in the Tropicair Theater, who had been watching the aerial performance, raced over to the all-metal *Silvaire* which lay smashed upon the pavement. To their horror they recognized the crushed bodies they dragged from the plane as those of friends—Denvir W. Howze, 25, an usher at the theater, and Joseph C. Carpenter, Jr., a ticket seller. Both men were licensed private pilots.

Howze and Carpenter had borrowed the plane in the morning for a 270-mile flight to Ocala, Fla., to visit Howze's mother. They lunched with her, then flew back to Miami. Just before the crash they were seen diving toward the concession booth and projection room. It was not the first time they had buzzed their friends in the theater but it was the last. . . .

What madness, what foolhardiness seizes pilots who buzz? Could they be deliberately trying to kill themselves?

Some psychiatrists answer yes.

They claim that there is a deep subconscious desire among many people to destroy themselves. They do not even recognize themselves that they are death-bent. Yet in their subconscious minds they are choosing a course which will bring them to suicide.

Have you ever buzzed? If you have, maybe you are one of these people. Think it over. The doctors deny that you could examine your own mind to the extent of arriving at a rational conclusion but perhaps you can arrive at an irrational one—*you are accident-prone!* If you have ever buzzed in your life you are suspect to a psychiatrist. It doesn't seem possible to many experts that you would buzz unless you were trying to destroy yourself.

The statistics prove it. In 1948—the last year for which figures are available—430 persons were killed in buzzing. That is more than a third of all people killed in private flying!

Of course, buzzing is not always the result of a hidden death wish—though it is no less dangerous for that reason. Accident researchers, who possibly take a less romantic view of crashes than do psychiatrists, believe there's a simpler motivation. They just call it "showing off."

They reason that buzzing is done by immature young men who want to call attention to themselves. It is an infantile reaction by people who still live imaginatively in the days of Lincoln Beachey, when everyone who flew was a daredevil. Just plain ordinary flying is too tame for these men. In their hearts they realize that flying is safe and so they deliberately inject danger into it. Somehow that proves their bravery to themselves—and to others.

In a way they're like children who stand on one leg in the living room when company is present and shriek "Look-at-me!"

There are few buzzing reports among older men. It's the young pilots who stand in the parlor screaming to call attention to themselves. They prove their adolescence by buzzing. If they live long enough they usually outgrow it.

The main psychological reasons for buzzing therefore seem to be two.

1. Some pilots subconsciously desire death and, unknown to their conscious minds, are seeking means of self-destruction.

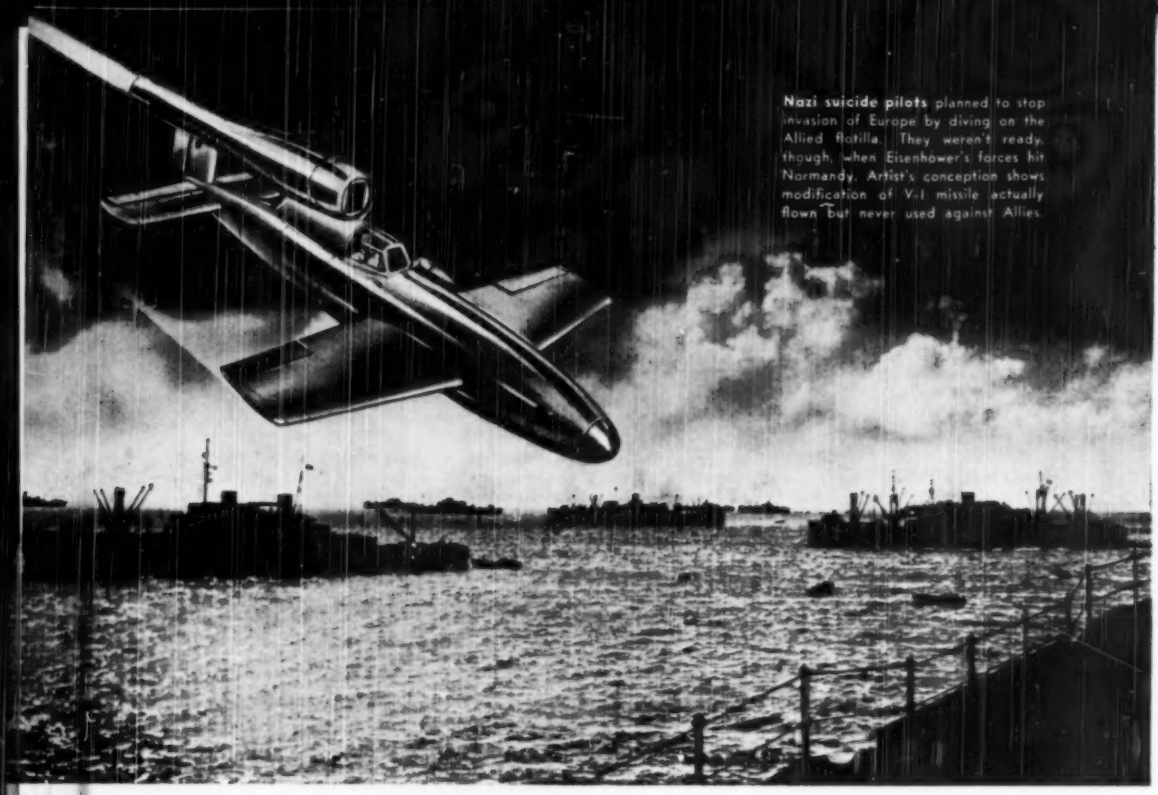
2. Other pilots, and this probably includes most, are simply immature. They buzz to show off.

In any event, they are dangerous to themselves, to their passengers, to persons on the ground, to their airplanes and to property. They are the biggest single headache in the aviation business and they should be driven out of flying as fast as possible.

Can one detect these accident-prone nitwits in advance?

Unfortunately, it doesn't appear possible. Psychologists have been working with the idea for years. Even the armed forces have been forced to conclude, after careful study, that it is not practicable to eliminate accident-prone pilots by any known tests. The results of tests have been so uncertain that it is generally conceded they do not have enough accuracy to make them worth while.

For example, in January, 1949, Charles Edward Estep, 23, and Jack Sniffen, both of Dos Palos, Calif., were killed in a buzzing accident on a dairy farm 12 miles east of Los Banos Airport, Calif. Estep had a (*Continued on page 62*)



Nazi suicide pilots planned to stop invasion of Europe by diving on the Allied flotilla. They weren't ready, though, when Eisenhower's forces hit Normandy. Artist's conception shows modification of V-1 missile actually flown but never used against Allies.

Aunt Hanna AND HER HARI-KARI BOYS

By R. G. NAUGLE

THE Japanese weren't the only people who figured that fanatics strapped in the cockpits of little wooden glide-bombs could wipe out an invasion fleet. The suicidal *Kamikaze* idea wasn't patented. Germany had a typically Teutonic and even more fantastic plan.

The hell with crash-diving onto the decks of Allied ships—they'd dive into the water a short distance away—and blast the ships under the waterline. And, believe it or not, this Kingfisher-like tactic was conceived and developed by a woman!

Her name was Fraulein (*Flugkapiten*) Reitsch—Hanna Reitsch—the Babe Didrikson of German aviation, a rabid Nazi and a famous test pilot. At one time or another, she hoisted her slender 100-pound frame into the cockpit and checked almost every Nazi warplane.

Who Is Hanna Reitsch?

Holder of the Iron Cross and an honorary *Flugkapiten* for "outstanding aeronautical achievement," comely Hanna Reitsch was a top Nazi test pilot. Her skill as a pilot was world-famous and in 1938 she competed in the Air Races at Cleveland.

As Berlin's defenses crumpled in April, 1945, Hitler summoned his Air Force Chief, Gen. Robert von Greim, to the bunker for a last meeting. Hanna sat behind von Greim in a Fieseler *Storch* during a hair-raising tree-top flight. Near the Chancellery, von Greim was hit by flak and Hanna, leaning over his shoulder, landed the plane safely in the streets. They left the bunker the day before Hitler committed suicide.

To escape capture by the Russians, Hanna's father shot her mother, a servant, her sister and her three children, and then himself. Hanna was captured by the Allies, later released. Now 38 and still single, Hanna Reitsch lives somewhere in Germany.

The pilots were ready to die; the mechs were working like mad—but the call never came.

And she was good. She flew the very hot Messerschmitt Me-163 rocket plane—and almost killed herself when the landing gear wouldn't work. She was test pilot on the Stuka dive-bomber when it was developed; she was the first to fly the Focke-Wulf helicopter—later flying it inside a closed sports arena. In 1938, she flew at the Cleveland Air Races. High in Nazi favor as the perfect type of Nordic superwoman, she enjoyed the friendship of everyone who was anyone in German aviation and political circles from Hitler on down.

In fact, it was she who delivered the last guest to Hitler's little slash-your-wrists party at a certain bunker in the center of Berlin in the last days of the thousand-year Reich. She got away though. She flew in—landed in the streets—and flew out again. The party was getting too rough.

Hanna got the idea for the manned glide-bomb and the suicide squadron back in 1943 when after a soul-searching talk with herself she decided, with considerable logic and foresight, that Germany was in for a lacing unless something drastic was done—and her mind specialized in just that sort of thing.

She knew an invasion of France was inevitable and she also knew if Germany were to stave off defeat that invasion must be stopped. Prevent troops from landing, she reasoned, and Germany was saved.

To do so, however, required some fantastic masterstroke, but she thought she had just the scheme that could do the trick. The idea was to devise a very powerful and positive weapon, some sort of manned flying-bomb that would blow invasion ships to Kingdom-Come. She believed that the sacrifice of one life per ship was a small price to pay.

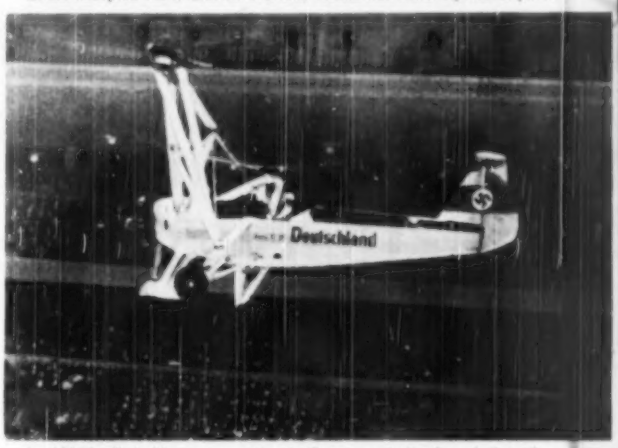
To accomplish this ambitious plan, Hanna first sold the idea to a group of volunteers, both civilian and Army personnel. These volunteers were not simply yearning for a quick death and an everlasting martyrdom, but thoroughly understood the serious military situation and were willing to sacrifice themselves to guarantee a German victory. By the fall of 1943 she had gathered together a group of some 30 or 40 young aviation enthusiasts —many of them husbands and fathers—who were willing to pilot the glide-bomb.

Hanna herself was to be chief test pilot and determine the tactical practicability of the glider or airplane selected and its equipment. Most of the volunteers were former or active glider pilots although few had ever flown powered airplanes.

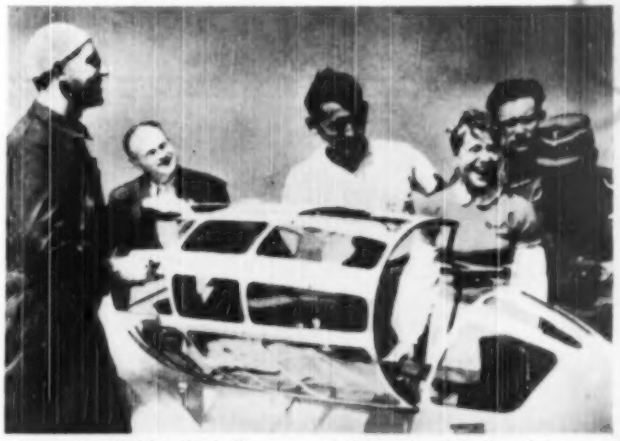
The early organizational work was carried out by Hanna along with a Lieutenant Lange and a Dr. Theodor Benzinger—a director of the Institute for Medical Aeronautics—who was to carry out the medical and psychological research that would allow the pilots to maintain full command of their physical faculties and clarity of mind right up to the last instant of the crash attack. Lieutenant Lange did the paper work and was the administrative spark plug who handled all the details.

After setting up this nucleus of an organization, Hanna's next job was to sell the idea to the right people and get official support, technical advice (*Continued on page 50*)

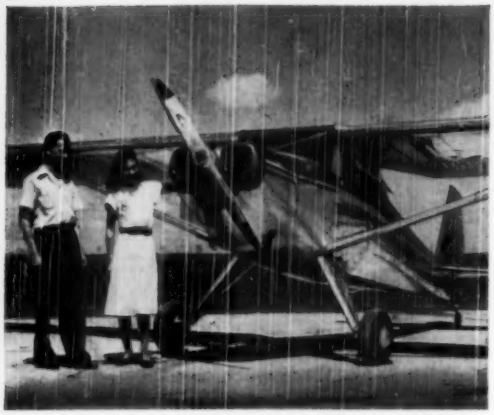
Hanna's big moment came in 1941 when the Fuehrer gave her the Iron Cross for developing aviation instruments. Fat Hermann Goering beamed as she accepted the award. At one time Hanna was Hitler's personal pilot.



A skilled pilot, Hanna was active in German aviation long before the war. In 1938, she startled the world by flying a then-revolutionary helicopter inside a closed hall in Berlin. The 'copter was built by Focke.



Hanna laughed happily in the summer of 1937 as she climbed into her glider to compete in a race. Six years later she was busy rounding up glider pilots who were willing to fly suicide bombs for the Fatherland.



Preventive maintenance can keep a lightplane gleaming and in top-notch shape. Too many pilots waste time in aimless tinkering.

Puttering That Pays

By GIL CLOSE

Take a tip. Save yourself a few dollars—and prolong the life of your airplane.

Wax coat on aluminum fuselage and control surfaces helps preserve metal (left). It's also a good idea to remove pebbles from tire treads (right). Small rocks may be sharp and work deeper.

WALLY MORRISON looked sheepish as he walked toward the hangar repair shop. He was carrying a jigsaw puzzle of parts that showed evidence of having once been a perfectly good wing-mounted wind generator.

Wally dumped the parts on the workbench and looked belligerently at the grinning mechanic. "Can you put this darned thing together?"

"I reckon." The mechanic wiped his hands on his coveralls, then picked up the parts, dumped them in a wire basket and lowered them into the vapor degreaser cleaning tank. A moment later he lifted them out, let them cool a minute, and swiftly began fitting them together.

Wally stood by watching. Finally, he said: "I figured the commutator needed cleaning. It looked dirty. So I took it apart."

The mechanic shrugged. "It'll look dirty 10 minutes after you use it again."

Wally grunted, picked up the assembled generator, and walked back toward his plane. The mechanic yawned, and said: "He'd done a lot more good if he'd spent that time washing and polishing his windshield."

The windshield of Wally's *Cub* was streaked with dirt. It had begun to get yellow in a couple of places. A scratch laced across it, directly in the pilot's line of vision. An hour with the proper tools and techniques would have made it look like new. Yet Wally had spent that hour disassembling the wind generator because the commutator "looked" dirty. Then he'd paid for his aimless tinkering by having to have the generator reassembled for him.

Next to actual flying, the average lightplane owner likes best to tinker with his airplane. Give him a Sunday morning with zero ceiling and nine times out of 10 he'll head for the airport long before his wife leaves for church. He knows the peasoup conditions will prevent him from flying, but that crate of his draws him like a magnet. His fingers are itching to do something with it—maybe just take something apart and put it together again to see what makes the wheels go round.

That's the big hitch—it's the slip-noose of idle curiosity that threw Wally Morrison for a loop. Too many pilots spend hours in aimless puttering when they could be doing valuable preventive maintenance work.

Not one plane in a hundred is in perfect condition. You won't have to look far on the average lightplane to find something that needs attention. The sooner defects are remedied, the less work they require—and the less damage will have occurred.

Most preventive maintenance jobs can be done by the owner without danger of violating CAB regulations. But what, actually, is preventive maintenance? Basically, it serves four purposes:

(1) It reduces the possibility of failure by maintaining parts and assemblies at initial strength.

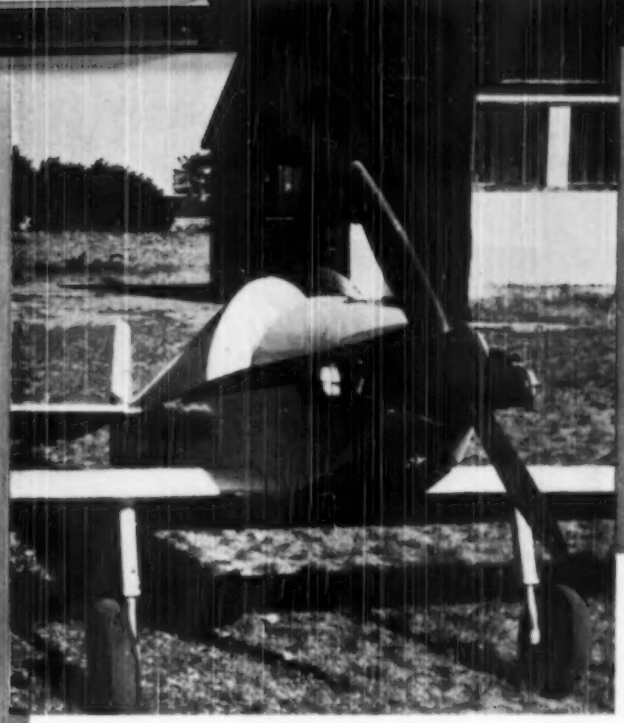
(2) It increases the useful life of materials by preventing deterioration.

(3) It results in economy of operation.

(4) It aids both pre-flight and periodic inspections by keeping all parts of the plane in clean and shipshape condition.

Let's examine a few preventive maintenance jobs and predict their effect on plane life and operation. We'll start with the engine. Grease, dust and lint can accumulate in the cooling baffles around the engine cylinders. Effect of this dirt on engine cooling is directly proportionate to the amount present. You can blow a lot of it away with compressed air, but the more stubborn deposits will have to be washed away with a narrow brush and unleaded gasoline.

While you're working around each cylinder, check all of the spark plug porcelains for (*Continued on page* 47)



$1400 Lightplane

By
CHARLES W. CAIN
EXCLUSIVE TO FLYING

Bebe-Jodel sells for $1,400 in France. Cruise is over 90 m.p.h. on 35 h.p.

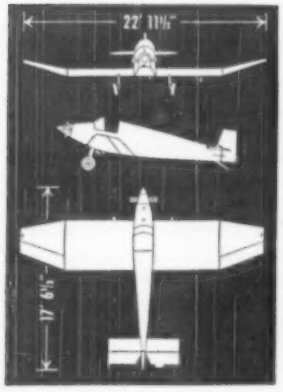
ONE OF the most popular new lightplanes in France is a little stick and fabric single-placer called the *Bébé-Jodel*. It sells for only $1,400 in American money, and for those who don't have that much cash, it can be bought piecemeal and assembled from plans. The *Bébé-Jodel* is an extremely rugged and strong plane by American standards; it is built to a load factor of 9G. Considering its 25-35 h.p. engine, it has surprising performance with a cruising speed over 90 m.p.h. (on 35 h.p.) and landing around 30.

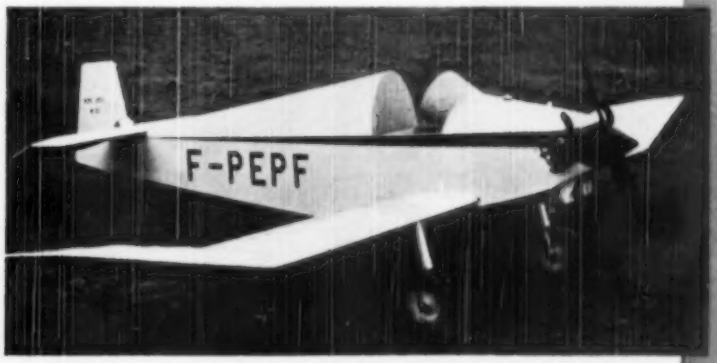
The story of the *Bébé-Jodel* is the story of the surprising success of MM. Joly and Delemontez who formed Avions Jodel (named from the first letters of their last names). Their plant is at Beaune in the Cote d'Or district of France. Beaune is the center of the Burgundy vineyards, and is 23 miles south of Dijon.

Monsieur E. Joly was building lightplanes and powered gliders before the start of World War II, His company started to repair and maintain farm machinery in 1940-41 when the plane-building business was *kaput*. After the war he formed a partnership with his son-in-law, M. J. Delemontez, a design engineer, in March, 1946. Avions Jodel undertook contracts for the repair and maintenance of state-owned training planes and gliders.

But from the beginning they dreamed of manufacturing an inexpensive, high-performing lightplane. For nearly five years they spent every spare moment on various ideas. They scrapped eight basic projects before they hit upon the D.9 *Bébé-Jodel*.

Monsieur M. Joly test flew it January 21, 1948. The partners realized that many pilots would not be able to afford the 475,000-franc (*Continued on page 55*)





Midget single-placer is rugged, built to 9G load factor. It stalls at 25-28 m.p.h. and 35-h.p. model has 131-foot take-off run. Company is selling design plans for $15 per set.

Hot Air Dictionary

By HY SHERIDAN

Cartoons by Jack Tippit

Static

Artificial Horizon

Flying Blind

Accident report—Wham!

Acrobatics—Extemporary maneuvers of temporary pilots.

Airplane—That which is, like a woman, easier to take up than to put down.

Airport—A small piece of wasteland entirely surrounded by high-tension wires and politicians.

Airways Traffic Control—A system for bringing airplanes together.

Altitude—That which should be run out of slowly.

Artificial horizon—The strapless dress.

Blind approach—What happens when you take a couple before the party.

Blow-out—It won't be round much longer, and maybe you won't either.

CAA inspector—That which is to the pilot what the flea is to the dog.

Cold front—That which a woman puts up when she is not hungry.

Compass—A great kidder.

Contour chaser—The paws that refresh.

Dive—That which one should arrange to get out of before one gets into.

Dope—That which is to be put on the wings—not in the cockpits.

Drift—Commonly called "your drift." That which she tells you she doesn't get, but don't you believe it because the chances are that she put you in it.

Fire—That which the main thing to do in case of is to stay cool.

Flare-out—What happens at a cocktail party when you come late and try to catch up.

Forced landing—Beer.

Fuel—The fuel and his pilot are soon parted.

Gastanks—Bottomless pits for disposing of fuel.

Hangar—An arena where mechanics are wont to play hockey with airplanes; a place for curling wingtips.

High compression—The ping of condition.

☆

When FLYING asked Hy Sheridan to start compiling "Hot Air Dictionary," the editors had in mind Ambrose Bierce's famed "Devil's Dictionary." The results typify the unique talent that has attracted nationwide attention to Hy. Recently Notre Dame University aeronautical students nominated him their candidate for aviation's outstanding personality.

☆

Jet-Assisted Take-off—A tail wind can do you a lot of good.

Landing—A touching situation.

Landing gear—That which should just fit between the airplane and the ground, especially on landing.

Lazy eights—One good turn deserves another.

Low visibility—The New Look.

Magneto—An ingenious device for collecting water.

Navigation lights—A great aid if you stay between them.

180° turn—The only dependable aviation safety device.

Pilot error—Mating call of the CAA.

Radio—A method for causing deafness second only to marriage.

Reversing propellers—The more whoa the less woe.

Safety Bureau—A group of men devoted to making aviation safe for bureaucrats.

Slow rolls—Tightwads.

Spot landing—The practice of hitting a spot while not permitting it to hit back.

Static—All the joys of marriage without the expense.

Stress—What a girdle has.

Tailspin—A maneuver where the tail tries to surround you.

Throttle—A perfect intelligence tester; it is often pushed when it should have been pulled; resembling the mouth, it is often opened when it should have been shut.

Tires—An example to mankind; they last best if they keep their wind to themselves.

Traffic clearance—Every man for himself; the stampede.

Trim—What attracts a man.

Trimmed—What happens to him.

Up drafts—What girls feel.

Windshield—The world's best bug trap.

Wing tip—When you don't know what you're doing, don't do it.

GIUSEPPE M. BELLANCA
In 1903, Bellanca started experimenting with aeronautical design. He built a pusher-plane in 1908-09, and since then has constructed many world-famous craft, including the "Miss Columbia" and "Flash," both of which set world records. Since 1927, he has headed Bellanca Aircraft Corporation.

THE BELLANCA *Cruisemaster*

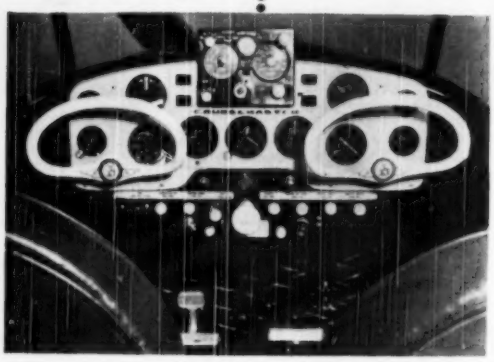
By BEN ROBIN

OFF THE DRAWING board of Giuseppe Bellanca has come a four-placer that combines high performance and low operating cost. The *Cruisemaster* is the fastest, best-equipped plane that Bellanca has put on the market.

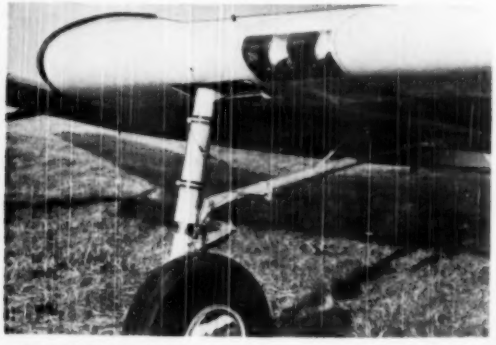
In the past, Giuseppe Marco Bellanca (called "G.M." by his 400 employees) and his brother John have designed many world-famous planes. They built the *Columbia* in which Acosta and Chamberlin flew 51 hr. 30 min. in 1927 to establish the world's first non-refueling endurance record. That same year Clarence Chamberlin and Charles Levine flew the *Columbia* from New York to Germany.

Another world record in a Bellanca-built aircraft was Capt. James Mollison's transatlantic flight in 1936 when he flew the *Flash* from St. Johns, Newfoundland, to Croydon Airport, London, at a speed of 257 m.p.h.

Many old timers remember the *Air Bus* and other Bellanca models of a few years ago. Talk is buzzing around the Bellanca factory at New Castle, Del., these days about resuming production of several older models for use in the northern bush country. In the meantime Bellanca continues to build the 150 h.p. *Cruisaire*, and has added the new 190 h.p. *Cruisemaster* to its line.



Instrument panel looks like airliner's. Standard equipment includes complete flight instruments and radio facilities plus instrument, navigation and landing lights. Note pilot's toe brakes.

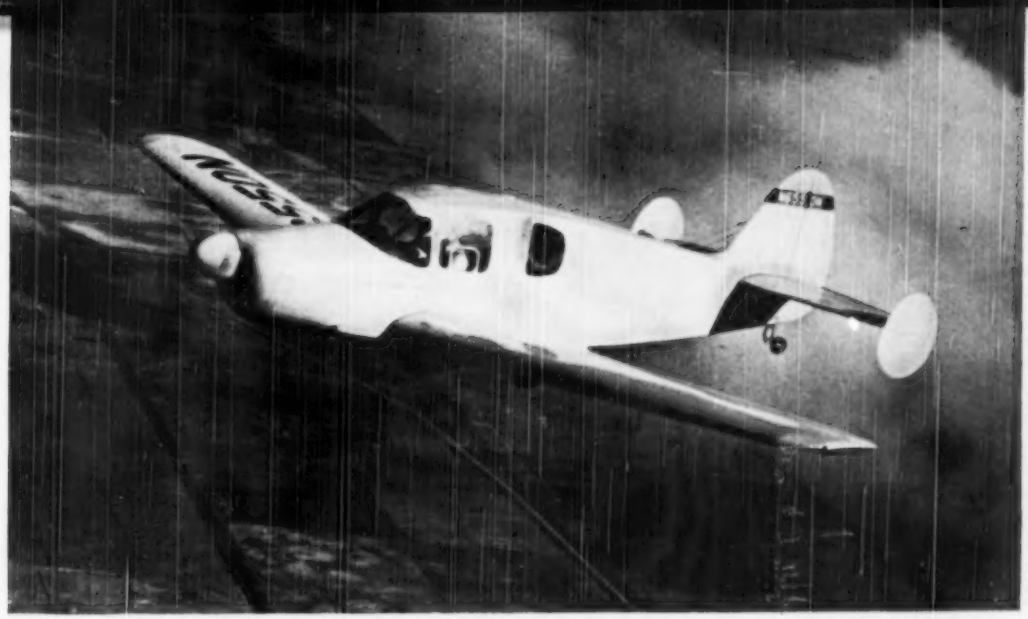


Retractable landing gear and flaps are operated hydraulically. The gear lever is shaped like a wheel and flap handle resembles an airfoil, minimizing possibility of pilot error in using them.

FLYING's CHECK PILOT

EDITOR'S NOTE

This series of articles is planned to help the pilot and prospective plane owner evaluate aircraft now on the market. Only aircraft holding a C.A.A. Type Certificate are flown. The authors evaluate each aircraft through the eyes of the average private pilot who flies an airplane for business or recreation.



Bellanca Cruisemaster, powered by 190-h.p. Lycoming, sells for $9,500. It cruises at 180 m.p.h. (75 per cent power at 6,000 feet) and has top speed of 190 m.p.h. Span is 34 ft. 2in., length 23 feet and height 6 ft. 2½ in. Empty weight is 1,525 pounds, gross 2,600 pounds.

At first glance, the *Cruisemaster* looks much like the *Cruisaire*. The *Cruisemaster's* triple rudder, the angle of attack on the ground and the gentle top-fuselage slope from the cabin roof toward the empennage are also found in the *Cruisaire*.

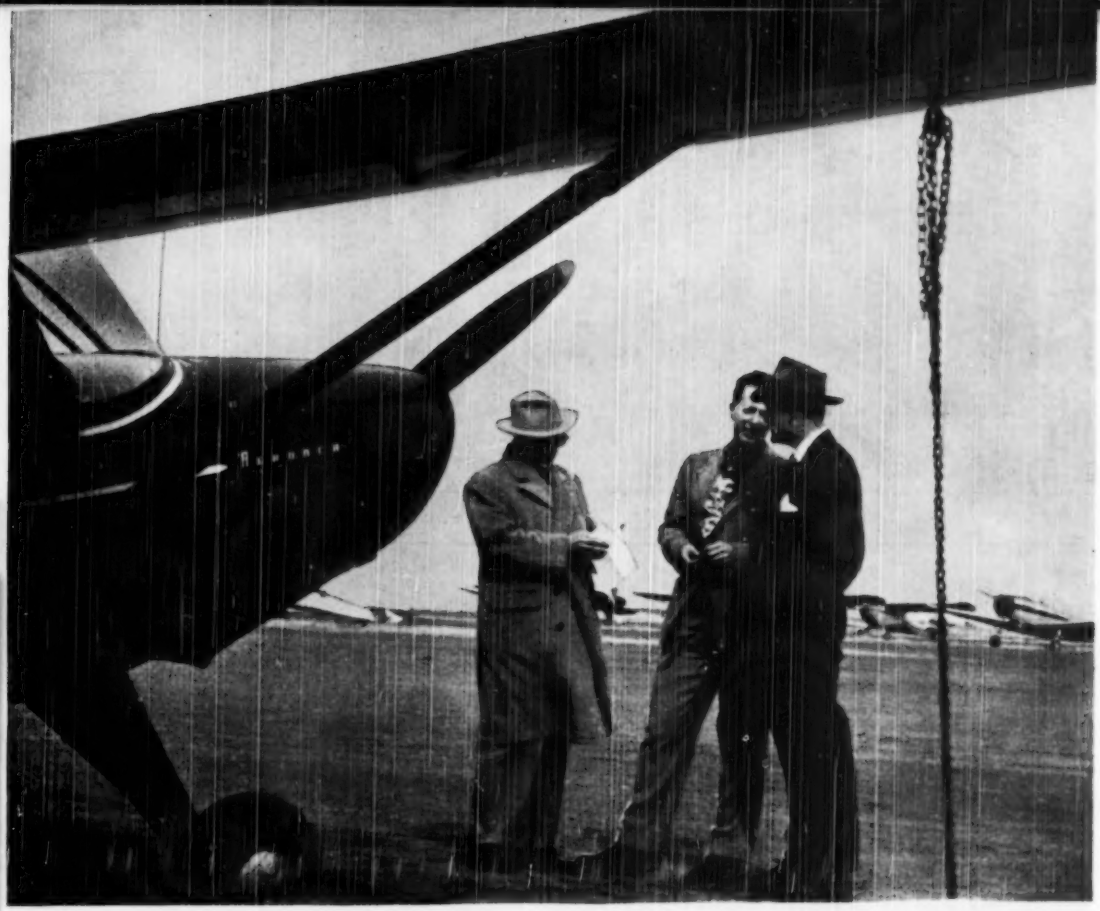
At close range, the longer nose of the *Cruisemaster* is immediately apparent. The engine cowling houses a 190 h.p. six-cylinder opposed Lycoming engine. This engine proved dependable in the Army Liaison L-5 during the war, and Bellanca says it is the only engine in its class with no operating restrictions. Full take-off power may be used right up to cruising altitude. The engine is equipped with manually-operated cowl flaps.

Another striking difference is the large prop spinner, which adds length and beauty to the *Cruisemaster*. A Hartzell controllable hydro selective propeller is standard equipment and the square-bladed tips seem to match the square wing tips of the plane.

Other changes from the *Cruisaire* are not immediately apparent to the eye: The wingspan has been increased two inches to 34 ft. 2 in. Overall length is longer too: 23 feet for the *Cruisemaster*—an increase of over 20 inches. The height of both planes is the same, 6 ft. 2½ in.

Gross weight of the new plane is up 550 pounds to 2,600 pounds while the useful load increases 175 pounds to 1,075 pounds. The baggage compartment (with an exterior door) is larger and carries up to 198 pounds with full gas tanks and four passengers. (*Continued on page* 46)

Elongated nose, large prop spinner differentiate Cruisemaster from Cruisaire. Controllable hydro-selective prop is standard equipment.



Clinching sale. Vest (center) talks with two prospects from Texas. They examined Aeronca Sedan with 85 hours total time, bought plane at substantial discount from list price. Every plane is sold with a written 30-day guarantee. Vest delivers planes anywhere in U. S. for flat $50.

Eddie Dyer (right) is full partner with Vest in a parts and repair shop. Parts business grossed estimated $20,000 in June. Shop employs about 20 persons.

Top-notch aircraft move rapidly on Vest sales line at Old Park Hill Airport (right). Vest expects his total sales in 1950 to be about 50 per cent better than '49.

AVIATION'S
Million Dollar Salesman

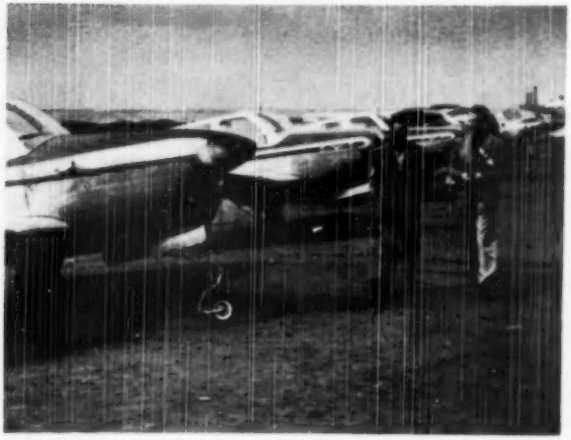
Salesman Don Vest sold over $1,000,000 worth of used planes during 1949.

How does he do it? Denver's Don Vest sells more planes than any other dealer in the world.

LANKY, SANDY-HAIRED Don Vest of Denver, Colo., celebrated the 1949 slump in aviation business by selling over a million dollars worth of used planes. To do this he bought and resold approximately 750 airplanes of all types and sizes up to twin Beechcrafts. The average sale price was under $1,400 and Vest delivered the planes anywhere in the U. S. for a flat fee of $50.

Every plane was sold with a 30-day written guarantee and the purchaser who wanted credit could insure at conventional rates or pay a 10 per cent premium on the balance due and get an insurance waiver. One month after each sale, buyers got a letter from Vest Aircraft & Finance Co. asking if they were satisfied with the airplane and the price—or if they had any criticisms or suggestions on the transaction, the company, the personnel, the manner of delivery, the condition of the plane, and the first month's service.

Ten per cent of the customers who answered the query had some complaint or other. Later letters show the complaints were heeded and the customers satisfied.



Typical of the other 90 per cent is Walter Rupert of Rupert Flying Service, Beaverton, Ore.

"The Cessna 140 was better than represented and the price was right," he wrote. "It is the first plane I ever purchased from a dealer who seemed interested to learn later if I was satisfied . . ."

Vest is not a broker. If you want to sell your airplane, he will buy it and list it for sale at a moderate mark-up. If he makes a mistake and pays you more than the public is paying for such a plane, it is marked down to cost at the end of 30 days. If it hasn't sold in another 30 days it is cut as much as 50 per cent, or even lower to get it off the field. That applies to an $8,000 *Navion* or *Bonanza* as well as to a $500 *Cub* or *Taylorcraft*. If nothing else, the plane will be resold to the parts company operated by Eddie Dyer, a partner of Don Vest's, and dismantled for resale as used parts.

With the independent company running up to $20,000 a month in used parts, there is a steady demand for planes off the line—and that means good equipment and not junk. When I was in Denver, a 1948 *Navion* with less than 200 hours was being dismantled to supply replacement parts to various customers. It was in perfect shape—but there is money in used parts, too.

Junk planes, on the other hand, are sold for just that—junk. At so much a pound and melted down.

Because Denver is a long way out west and the mass markets are east of the Mississippi River and west of the Sierra Nevada, a lot of people are mystified at the volume of Vest's business.

His answer is simple—MERCHANDISING!

Others are following his lead now, but Vest was first to deliver anywhere in the nation for a flat $50. That meant a potential Cessna 140 customer in Delaware could have a good look at a Vest plane on his own airport for only $50. And, he knew that Vest wasn't going to misrepresent the plane's value because the $50 didn't even pay the pilot's expenses to Delaware, let alone his airline fare back to Denver.

The same for another customer in Florida who perhaps wanted to see a twin Cessna. Once in a while a sharper turns up, figuring Vest won't take one home again. They will try to start cutting prices. But, says Vest, "We just fly 'em back to Denver if need be."

About 30 queries are received every day from people with airplanes to sell. A bid is made either by mail or phone or wire. The owner flies (*Continued on page 54*)

By BOB ARENTZ

That First Jet

Russ McJunkin had never flown a jet. But his first hop was solo!

MIDSHIPMAN Russell E. McJunkin, Jr., was a little nervous when he took his first ride in a jet plane. Maybe it was because he didn't have anyone to talk to. He was flying solo.

That's standard operating procedure in the Navy. When a pilot's ready for checkout he's sent up alone in a single-seat *Shooting Star* to learn what jet flying's all about.

McJunkin, a sandy-haired 21-year-old from Gilroy, Calif., was assigned recently to the Jet Training Unit at Whiting Field, Fla. There, in a four-week course, jet pilots are checked out in TO-1's (Navy designation for *Shooting Stars*) shortly after receiving their wings.

The highlight of McJunkin's training—in fact, the most thrilling moment in his life—was his first hop in a jet.

"When I started to put on my flight suit," he said, "I got shaky."

He walked out toward the line of silver jets with his instructor, 26-year-old Lieut. (jg) John M. Moore of St. Louis, Mo. Moore climbed up on the ladder beside the cockpit and checked to see that Mac was all strapped in. As they had numerous times before, they went through the check-list and over the instrument panel. Moore glanced to see that flaps were down, dive brakes up.

1 **Before solo,** Midshipman McJunkin checked all instruments in Shooting Star cockpit with instructor, Lieut. (jg) John Moore. Mac studied jet planes for 33 hours in ground school but up to this point had not flown in one. When he took first ride, he was on his own.

Ride Is Lonely...

By CHARLES L. BLACK
Managing Editor of FLYING

"Remember, Mac," he said, "you've got a lot of switches and instruments here. Sometimes when the panel's all lit up it'll look like a Christmas tree." He grinned at the midshipman. "Don't forget, if a red light goes on, *do* something. Get it out." McJunkin nodded. He should be able to handle everything; he'd had almost 33 hours of jet ground instruction.

Moore looked closely at McJunkin. The student appeared slightly nervous, and Moore slapped him on the shoulder. "You'll do fine, Mac. Fine."

Mac started the engine. It changed from a low-pitched roar to a high-pitched scream as he checked it at higher throttle settings. Moore said: "Say, you're doing all right. How long you been flying this plane—four or five years?" Mac grinned.

Then Moore climbed down the ladder and the midshipman was on his own.

While Mac taxied out to the end of the runway, Moore walked over to a mobile control tower, a jeep with a portable radio. The entire check-out flight would be monitored from here.

The instructor nodded to several officers standing by, said: "Here goes my boy. Watch him."

Out on the wide expanse of Whiting Field, Mac was taxiing toward the end of the runway. He rolled to a stop, pumped his brakes up and held them firmly. Then he opened the throttle 100 per cent. The engine whined as he looked toward the tailpipe temperature to see that it didn't exceed 850° centigrade. It was well under 700°. He checked fuel pressure, making sure it read between 250 psi and 350 psi. Oil pressure was okay and his loadmeter was indicating "charge." Hydraulic pressure, okay.

His eyes swept over the instruments. No red lights burning. He was ready for take-off.

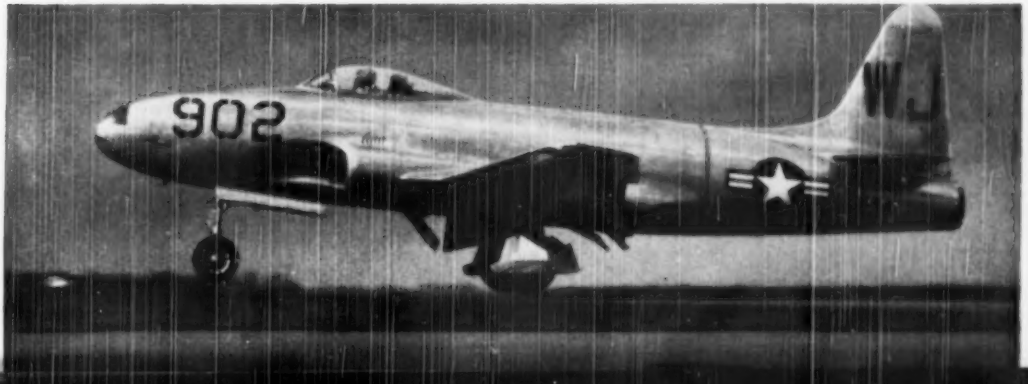
Lips tightly compressed, Mac released the brakes and the *Shooting Star* started forward sluggishly. Jets don't accelerate fast. At about 75 m.p.h. the rudder became effective. Mac knew that the spring loading on the elevator would be overcome by air pressure at about this speed.

His thoughts were clicking rapidly. He knew he might over-control the sensitive plane, and was using a technique his instructor had shown him. He rested his arm on his knee, giving it support and hoping it would keep him from jockeying the stick back and forth. Mac concentrated so much on *not* over-controlling that he under-controlled. He didn't hold enough (*Continued on page 58*)

2 **Starting engine.** Mac checked it at various throttle settings. He looked slightly nervous and Moore slapped him on the back. "You'll do fine, Mac—fine," he said.

3 **Ready to taxi.** Mac grinned at instructor. Moore checked the entire flight by radio.

4 **Off the ground!** After bouncing down runway on nose-wheel, Mac remembered to exert sufficient back-pressure on stick, and pulled it off. Flight lasted an hour. By time Mac finished one-month course, he was thoroughly competent jet pilot. He is now with Atlantic Fleet.



Designer Fred Weick sits in mockup of plane's cockpit. It will have adjustable seat, allowing excellent visibility forward over plane's nose. Craft will be all-metal, low-winged monoplane.

Report on the AG PLANE

By TONY PAGE

Prototype farm plane should fly at Texas A&M sometime this fall.

THE FLYING FARMERS had a special reason for inviting CAA and Department of Agriculture representatives to their 1949 meeting at Fort Collins, Colo. The farmers wanted an all-purpose agricultural plane. It would take money to develop one, they reasoned—and the Government might be able to furnish the capital.

On the way to Colorado, the CAA plane just happened to stop by Texas A&M's Personal Aircraft Research Center. There, during a casual and informative little tour, they learned that a strictly-agricultural plane could be developed without much difficulty—with a little financial assistance from Washington.

Thus fired with new knowledge, the Government men flew to Fort Collins where the farmers were waiting.

The planning paid off.

Today, nine months later, Texas A&M has a $50,000 contract to "design and develop an agricultural plane." The prototype won't fly until fall, but some design features are known.

It will be a big, rugged "farm" plane—a worker. Though only a single-placer, its wingspan and length will be greater than a *Bonanza* or *Navion*. Payload will be 800 pounds. Designed to do a job, to be just as much a farm machine as a tractor or combine, the plane won't have any frills. It's being built for utility, economy, ease of operation and safety.

The man directing the project is no cloistered, ivy-tower plane-builder. Fred Weick, head of the Personal Aircraft Center at Texas A&M and designer of the *Ercoupe*, is one of the nation's top aeronautical engineers.

When given the job of building a plane that would make the farmer's job easier, Weick spent months analyzing the project before he began designing the craft. Scores of questions had to be answered. Just what did the farmers want—and need? What were the shortcomings of the converted training and personal planes now used for agricultural work? Using results of a survey of farmer and duster pilots, Weick set up elaborate specifications for the ideal farm aircraft. Then he started building a plane that would meet all his stiff requirements.

Even now, the veteran designer won't reveal the exact specifications for his forthcoming craft. It's still evolving; changes are still being made. But he has decided on a number of features for the new farm plane.

It'll be a 200-h.p., all-metal, low-winged monoplane with slotted flaps—a single-seater that will be able to get off the ground and over a 50-foot obstacle in 1,000 to 1,320 feet and climb at better than 700 f.p.m. Its 800-pound payload (1,200-pound over-load) will accommodate plenty of dust or spray.

Each decision on the plane's characteristics was made after careful study. Weick decided the craft should be all-metal in order to minimize tooling requirements and to allow easier upkeep.

He determined on the low-wing configuration for several reasons. When dusting in high-winged planes, many farmers complain of poor visibility in turns and to the rear. It is also easier to load dusting and spraying materials in a low-wing—and, too, the downwash helps to distribute the dust. A low-wing would give wide support to the landing gear, and would furnish additional protection to the pilot.

Forward visibility was one of the factors in selection of the Continental flat E-200 engine. (*Continued on page* 45)

The New Farm Plane

(Probable Specifications)

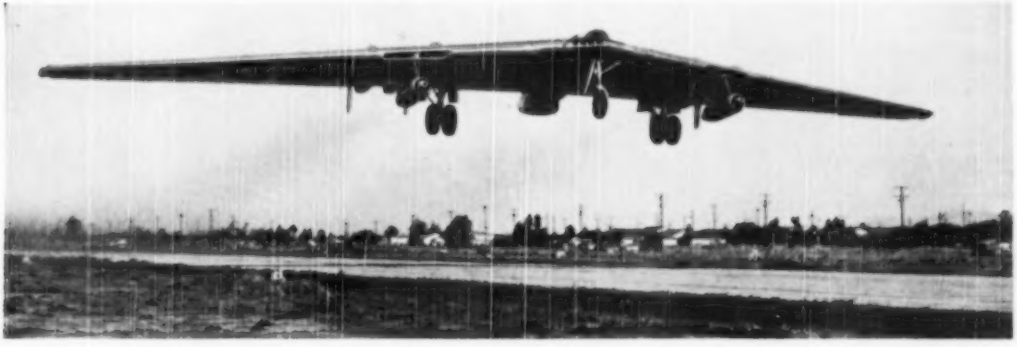
Wingspan	39 ft.
Length	29 ft.
Wing loading (per sq. ft.)	10½ to 12 lbs.
Crew	One
Fuel capacity	3 hrs.
Payload	800 lbs.
Overload	1,200 lbs.
Working speed	60-90 m.p.h.
Stalling speed	40-45 m.p.h.
Cruising speed	90-100 m.p.h.

HAVE YOU SEEN?

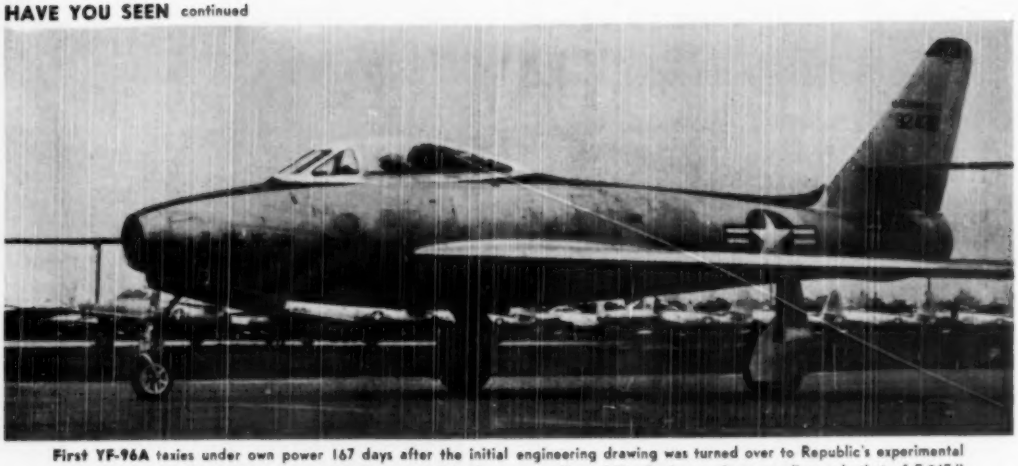
North American F-93A is built for long-range missions near speed of sound. Powered by J-48 turbojet, it is faster than the F-86. Engine develops 6,250 pounds of thrust, further increased by afterburner.

Piper 105 (Super Cub) demonstrates short take-off and steep climb. Note Whitaker tandem wheel landing gear.

First U. S. JATO demonstration by an airline was staged by Braniff with a DC-4. JATO is standby at La Paz, Bolivia, 14,404 feet high.

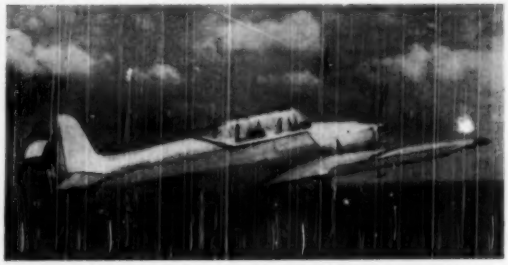


Newest Northrop flying wing is YRB-49A which features new mounting for its six jet engines. Pressurized craft is designed for photo-reconnaissance purposes, carries crew of six. It is powered by Allison J-35's, has undisclosed speed and range.

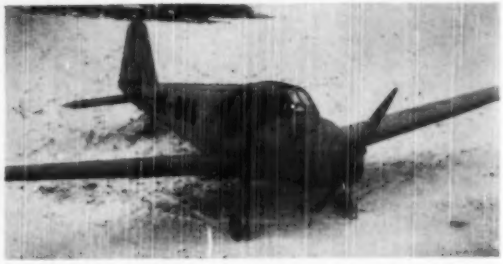


First YF-96A taxies under own power 167 days after the initial engineering drawing was turned over to Republic's experimental shop. It is a new sweptwing version of F-84, powered by late type Allison J-35. Design performance "exceeds that of F-84E."

FOREIGN PLANES



Latest Czech military primary trainer is the Zlin 26. The plane is currently in production for the Czech Air Forces.

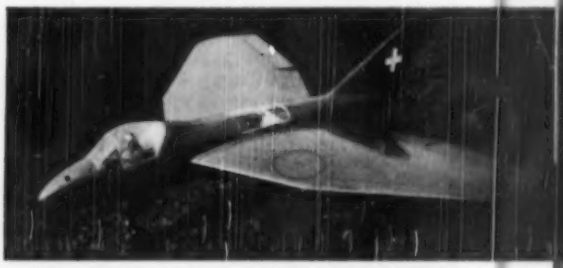


Aerobatic trainer used by Czechs is the Zlin 381. It is a two-seater with dual controls. Maximum speed is 124 m.p.h.

Prague-built Letov LG-125 Sohaj-2 single-seat, high-performance sailplane was designed by Czechs for export. It is developed from earlier Sohaj-1. Gliding ratio is 1:27 at 46.6 m.p.h. Glider cruises at 62 m.p.h. with sinking speed of 4.9 f.p.s.

Republic F-84E (see photo on left) gains increased range with addition of two more 230-gallon fuel tanks mounted on bomb shackles under wing. Universal tanks can also be mounted on wing tips, give craft maximum combat radius of over 1,000 miles, probable range of 2,500-plus.

Lombardi L.M.5 Aviastar is two-place Italian lightplane with hand-operated retractable gear. Markings indicate it is Swiss-owned model.



N-20 tailless research glider was designed by Swiss branch of the Dornier company. Development has been suspended.

FRENCH JET TRANSPORT

THE French, too, are considering building a jet transport. In contrast with their prodigality on other jet projects, however, they are going slow on the SO-5100 *Champagne*, which is pictured above. Only design studies have been completed to date on this four-jet transport which resembles the British de Havilland *Comet*. It would be powered by four 5,000-5,500-pound thrust Hispano-built Rolls-Royce *Nenes*, with the possibility of using afterburners. The builders have spoken of a 3,000-mile range goal. If the Air Ministry should decide to go ahead with the *Champagne*, a prototype would be completed and flying by 1952, and it would be in service by 1955. Cost of two prototypes is estimated at 4 to 5 billion francs.

Fokker S-12 is Dutch 2-3-seat trainer with all-metal cantilever wing, 106 m.p.h. cruise. Engine is 190-h.p. Lycoming.

Danish KZ VIII is single-seater stressed for 12-G loads. It has span of 23 ft. 7 in., is powered by 145-h.p. Gypsy Major.

I Learned About Flying From That! NO. 128

By ALEX VARNEY

Even the passenger knew that wings shouldn't look like a turtle's back!

Author learned to fly in 1920 at age of 19. From 1921 to 1933, he ran the Peoria, Ill., airport—and barnstormed in Jennies and tri-motored airliners. He was a captain in ATC during the war.

IF A PASSENGER ever tells me a wing looks like a turtle's back, the calf of a blonde's leg, or Humphrey Bogart, I'll climb right out and have a look at that wing before I take off. I'll never forget how near I came to disaster because I failed to recognize the importance of such a remark on the part of an anxious passenger.

It happened during the depression years when Rolla McClanathan and I were operating the Mt. Hawley airport at Peoria, Ill. Sometimes we collected hangar rentals the hard way by cancelling a long-overdue storage bill in exchange for the use of the customer's airplane.

Alex Varney, center, flew old Ryan monoplane 500 miles before he discovered broken rib-stitching in wings. Plane is sister ship of Spirit of St. Louis.

That's how we happened to be flying a borrowed Ryan monoplane from Peoria to New York City. Foot-high lettering on the side of its fuselage said the plane was a sister ship to the *Spirit of St. Louis*, but it was in no condition for a transatlantic flight.

A local doctor, a police officer, and the owner of a tavern were passengers on the flight. An hour before dawn we roared across the flag-marked strip of ground which we called a runway because it wasn't as rough as other parts of the airport.

Shortly after sunrise we landed at Fort Wayne, Ind., to refuel the Ryan and stow away some ham and eggs and coffee. When I was paying the gas bill, the airport attendant suggested that I get in touch with his employer, The Sweebrock Aviation Company, when I got ready to re-cover the Ryan. This struck me as a little odd because the airplane had been completely re-covered two weeks previous to the present trip.

I was fastening my safety belt when one of my passengers—Peters, the police officer—remarked that the wing reminded him of a turtle's back and he asked me if there was anything wrong with it. I assured him that all Ryan wings resembled a turtle's back and we took off.

On the return flight I decided to fly to Albany and then head west to Syracuse and the Great Lakes, because this route would avoid some rough mountainous terrain and the engine in the Ryan wasn't behaving too well.

Just before taking off from Albany, Peters again remarked, "that wing sure looks like a turtle's back."

A few miles from Syracuse I found out what had been worrying Peters. We met an airliner and as it streaked past us I turned to look at it and it was then that I saw the trailing edge of the wing. What I saw filled me with horror.

The trailing edge was bent upward. It certainly did resemble a turtle's back—if you picture the turtle upside down. I glanced over at the other wing. It was deformed in the same manner.

It was dusk and the terrain below us was a shadowy blur that discouraged an attempt to pick a spot for an emergency landing. I could see the Syracuse beacon flashing a few miles ahead.

I realized that we had been trusting our lives to damaged wings for more than 500 miles, but it gave me no assurance to know that disaster was long overdue. I tried to conceal my fears from (*Continued on page* 41)

PLANE FAX

Quick picture of

ZIMMERLY AIR TRANSPORT

ASOTIN COUNTY AIRPORT, WASH.

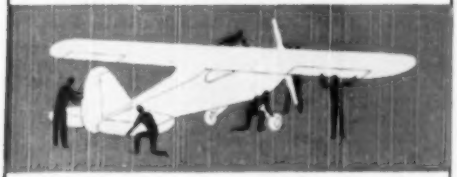
Crop dusting, spraying; Charter Service; Student instruction; 24-hr. service; CAA approved repair station; 1 mi. from Lewiston-Clarkston.

How Northwest pilots extend overhauls to 1500 hours

"We've been able to extend our major overhaul periods to 1500 hours through the use of RPM Aviation Oils," writes Mrs. Bert Zimmerly, owner of 17-year-old Zimmerly Air Transport, Asotin County Airport, Washington. "And even then we find the engines exceptionally clean with rings free and a minimum amount of wear. We've also found that rust and corrosion aren't problems when you use this fine aviation oil. We've recommended and sold 'RPM' exclusively for ten years, and know that it has helped us cut maintenance costs."

Throughout the West, airport dealers tell the same story: "RPM" keeps engines running cleaner and freer with fewer overhauls.

TIP OF THE MONTH



"Know your plane thoroughly—or don't fly"

"The safety rule we stress today in flight training is the same rule that helped us train 1,725 Army and Navy pilots without accident: keep your plane in perfect shape *all the time*. Check it *yourself*. Always, our first lesson to each new student is the inspection and care of the plane—and that lesson never grows old."

MRS. BERT ZIMMERLY, OWNER, ASOTIN CO. AIRPORT

"We're looking forward to saving money!"

"All 20 planes at this field are now using CHEVRON 80/87 Gasoline and we're highly pleased," Mrs. Zimmerly writes. "It has ended take-off knocking and pre-ignition, and we're realizing considerable reduction in fuel costs." CHEVRON 80/87—the first light-plane gasoline with a controlled take-off rating—may be used in some makes of engines up to 600 horsepower.

CHEVRON AVIATION GASOLINE

RPM AVIATION OIL

Standard Oil Company of California

T-33
WORLD LEADER IN JETS....
F-80
F-94
F-90

LOCKHEED

PRESENTS THE F-94

The largest producer of jet aircraft *in the world* is the Lockheed Aircraft Corporation.

More jet-propelled airplanes have come from the Lockheed plant than from any other factory. In fact, Lockheed has built jets at the rate of at least one a day—*every day for more than five years.*

Lockheed produced the first U. S. operational jet airplane—the famous F-80 *Shooting Star,* long the backbone of America's fighter defense.

Lockheed leads in the jet training program, too, producing the two-place T-33 and the TO-1 jet trainer for the Air Force and the Navy. These are the only jet trainer airplanes produced in America today.

And to win and maintain air superiority *behind* enemy lines, Lockheed has built the long-range, twin-jet F-90 Jet Penetration Fighter.

Now, for high-altitude interception, Lockheed is building the new F-94 All-Weather Interceptors, capable of around-the-clock, around-the-calendar defense.

These dependable Lockheed Jets have many mutual advantages—speed, strength and producibility. And the experience obtained in the design, development and manufacture of these practical jet airplanes is invaluable in the Lockheed laboratories where the planes of the future are taking shape today.

LOCKHEED

Aircraft Corporation, Burbank, California

Look to Lockheed for Leadership

I Learned About...

(*Continued from page 38*)

my passengers. I don't think I appeared any more disturbed than a man sitting in the electric chair waiting for the warden to throw the switch.

I saw headlines that read, "FIVE KILLED WHEN AIRPLANE SHEDS WINGS." I eased the throttle back and gently nosed down, keeping the airspeed just above stalling, and made a straight-in approach to the Syracuse airport. Never have I handled the controls more gently than I did on that long approach. I hardly dared breathe or make a move for fear the wings would fall off. I kept the airspeed so low that we dropped in with a heavy thud but no landing ever felt better to me.

Then I turned and looked back at the trailing-edge of the wing. It had settled back into place and looked like any other Ryan wing.

We wheeled the airplane into a hangar and opened up the wing. The bottom cap-strip of every rib in the wing was broken at a point less than an inch from the back of the rear spar, and the top cap-strips were badly damaged. Sections of ribs had been crushed throughout the wing. Every rib-stitch in the wing was broken.

It was not difficult to deduce what had happened. A curved needle is used to loop the rib-stitching cord around members over the top of the cabin and over the gas tanks. This entails a lot of tedious work. Apparently the mechanic who recovered the Ryan didn't believe it was necessary to go to so much trouble. He left a wide expanse of fabric free to whip up and down, breaking the rib-stitching around adjacent ribs. The destruction progressed rib by rib toward the wing tip until every rib-stitch in the wing was broken.

Then it was like picking a boy up by the seat of his pants; all the load fell on the nose and the trailing edge of the wing instead of being evenly distributed. We owed our lives to strong new airplane fabric that did not fail under the terrific strain.

In the Ryan wing there is an unusually long span of rib between the rear spar and the trailing edge. That part of the rib could not take such a load, and it failed.

I told my passengers that they would have to return to Peoria by train; I would borrow a parachute and fly back to Peoria. But McClanathan and Peters said, "We'll borrow parachutes too. We want to fly back with you."

Then it flashed into my mind that a parachute would be doubtful protection. Suppose a tiny rip developed in the fabric during take-off. The tear would spread in a flash and the cover would be gone in a matter of seconds.

I didn't sleep that night. Toward dawn an idea wormed itself into conscious thought. The more I thought of it the better it looked.

In the morning we went to a local lumber-yard where I purchased a huge bundle of half-round that is used to fasten screen to a screen-door. I purchased several gross of small brass screws at a hardware store. At the airport I bought a roll of rib-stitching cord. Then I hired every unlicensed mechanic that I could find around the Syracuse airport.

We fastened the half-round to the outside of the wing over the top and bottom of each rib, placing screws wherever we could find a section of rib solid enough to hold them. Then we rib-stitched the entire wing, passing the cord over the half-round, which served as a cap-strip on the outside of the wing. And we didn't neglect to stitch over the cabin and the gas tanks.

I can testify that Harold Emigh has a sound structural design in his *Trojan* for we could chin ourselves on the trailing edge of the Ryan wing when we had finished our job.

The remainder of our flight back to Peoria was uneventful. But I learned something about flying from that. The rib-stitching is the most important detail of any re-cover job. I'm something of a crank about making sure the cover is securely fastened to the ribs. It's the first thing I check before flying a fabric-covered airplane. END

★ FLYING TIPS ★

If your engine should stop during a power-off maneuver, and you try to start it by diving, cut switch first so that when it starts to turn slowly, it won't kick back. Wait until the prop starts rotating, then turn your switch on. Sometimes when the engine cools down during a long glide and fails to take when the throttle is opened, it is possible to give it a couple shots of the primer if the prop is still windmilling. The primer may help to get the engine under full power again—especially if it's a spring-loaded primer without a shut-off or locking device.

—*Foster A. Lane*

★ ★ ★

In protecting a lightplane from high winds, one of the most important points is proper chocking of the wheels. Often, through improper use of chocks, the plane begins to move, sliding the chocks away from the wheels. The plane is then free to pull against the ropes with probable loosening and eventual damage to the aircraft itself.

To guard against this, use four chocks. Place a chock behind the wheel, push the airplane hard up on this chock and while holding the plane back against it, kick another chock well under the front wheel, then release the plane. Repeat on the other wheel. The effect of this, of course, is that the weight of the plane helps hold the chocks in place and aids against their moving as the airplane is buffeted.

—*K. V. Brugh, Jr.*

Got any tips you'd like to pass on to other pilots? Contributions should be typewritten, not over 200 words, and accompanied by a stamped, self-addressed envelope. Payment for acceptable material will be made at regular rates. Address "Tips" Editor, FLYING, 185 N. Wabash Ave., Chicago 1, Ill.

AOPA NEWS

Aircraft Owners and Pilots Association is a service organization for the private pilot or aircraft owner. AOPA's full time staff is devoted to helping the individual pilot. Its aim is: "To make flying more useful, less expensive, safer and more fun."

Headquarters are: 15th and New York Aves., Washington 5, D. C. Members also receive a special AOPA edition of FLYING, newsletters and confidential aviation data. Opinions expressed in this column are not necessarily those of FLYING MAGAZINE.

N. Y. CONTROL AREA

Government officials recently postponed the designation of a 40-mile-radius "control area" centered on New York's La-Guardia Field, following a protest by AOPA. The control area, laid out and approved by the CAA, CAB, the airlines and the Port of New York Authority, would have placed additional restrictions on all types of flying in the area other than instrument flying.

AOPA's protest was based on the following facts, according to J. B. Hartranft, Jr., AOPA general manager:

1. More than 100 airports and operators in the area had no prior knowledge of the plan, and had not been given an opportunity to say whether the plan would hurt their business.

2. The present record does not contain sufficient evidence to indicate that such an area is essential.

"Establishment of a control area around New York would automatically raise minimum weather requirements for all VFR flying," Mr. Hartranft said. "Because the New York area is so widely used by the flying public, we feel that such a decision cannot be made lightly—and without full knowledge of the facts. We protested the plan on that basis, and it has been deferred until the next meeting of the Government air traffic control officials. Meanwhile, we have contacted all operators in the proposed New York control area—for the first time so far as this sweeping plan is concerned, we found—and now have a substantial number of statements from them.

"If the plan is ultimately adopted, it will at least be with the full knowledge of all users of that air space who are vitally concerned."

AOPA PRINTING

AOPA's Printing and Production Department is trying out new plastic plates. The idea is to make the printing process hours faster by developing the plate right on the press. The plate is covered with a sensitive film. A negative is put over the plate and bright lights focused on it. Then, with no chemicals, the plate is developed. This process, still in the experimental stage, will give AOPA printing an added speed boost.

The bulk of AOPA publications—Pilot Service Bulletins, Special Reports, Newsletters, etc.—are published at Washington headquarters. Recently, AOPA acquired a second Multilith press, speeding up production of pamphlets, brochures, and bulletins to the tune of 2,000,000 in the first four months of 1950. Last year's total production was over 5,000,000.

BOARD MEETING

AOPA's Board of Directors met recently in AOPA's new offices in the Washington Building.

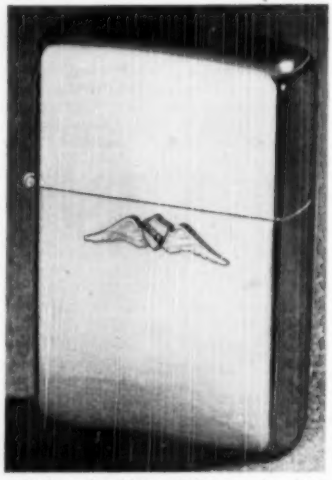
Board members were conducted on a tour of AOPA's new facilities by general manager, J. B. Hartranft, Jr., before attending the luncheon meeting, at which T. P. Wright, (AOPA 71057), former CAA Administrator and now director of the Cornell Aeronautical Laboratory, Inc., was AOPA's guest.

Members of the Board visiting AOPA were L. P. Sharples, P. T. Sharples, C. Story Smith, and Alfred L. Wolf.

MEMBERSHIP CONTEST

AOPA recently got under way a special AOPA "Pilot Parlay." Under "parlay" rules, every member gets a member to bring AOPA benefits to even more pilots and aircraft owners.

Every AOPA member is eligible to enter the big contest. Each member submits membership applications (on special parlay forms) for friends interested in AOPA. When five memberships have been submitted, the original member receives the first prize, a Zippo lighter decorated with the AOPA insignia. (See cut.)



With each additional five memberships submitted, the member gets additional prizes. After the first 25 memberships have been turned in, and the first five prizes awarded, the member is ready for the "second race" and second set of prizes.

Bonus prizes will be added for the 500th, 1,000th, 2,000th, etc., parlay membership applications received at national headquarters. Prizes for the races and bonus winners include Krick Weather Guides, Sheaffer desk pen sets, Safe Flight stall-warning indicators, Lear radios.

FLIGHT ROUTING

In the past few months, AOPA has routed an increasing number of members on flights to Canada and Alaska. Out-of-the-way fishing spots in Canada are the destination for many AOPA pilots.

In addition to the flight planning service, AOPA has on hand a complete list of resort airports in the United States and many of the Canadian resorts. If you're planning a flying vacation, write to national headquarters for information and assistance.

MINIATURE WINGS AVAILABLE

AOPA members can now order from national headquarters the special AOPA

solid-gold miniature wings with the AOPA shield.

The wings measuring ⅞ in. from tip to tip sell for $3. When you order be sure and specify "miniature wings." (See above cut.)

CHART CORRECTIONS

All AOPA members are asked to send to headquarters any information they would like added to aeronautical charts. Corrections on the charts should also be sent to AOPA. When these comments are received, AOPA forwards them to the proper authorities at CAA and the Coast and Geodetic Survey.

AIDS FOR FLYING VETS

Ever been stalled in red tape?

If you've tried getting a medical certificate or a GI training application, as some of our members have, you'll want to know about the speedy service AOPA gives to flying veterans.

Recently Richard A. Row (AOPA 56044), Chadron, Nebr., wrote AOPA asking for help in obtaining a medical certificate through CAA. CAA had denied him a previous request pending a report from the VA on his medical discharge from the Navy. AOPA located Row's medical discharge and got further checks on his case history for CAA. We then informed CAA that, according to the latest VA report, Row's condition (which brought on his discharge) had been cleared and his pension terminated. In a short time Row received his medical certificate proving he was in fit condition to fly.

And AOPA chopped off months in getting another pilot's GI training benefits approved. John C. McLamb (AOPA 63018), Opa Locka, Fla., asked us to speed up the processing of his A&E Certificate through the VA. After writing to the pilot's VA regional office and advising them several times of his need for the certificate, McLamb's application for GI training was finally approved.

A telegram from McLamb let us know that he had received his certificate of eligibility and was taking the courses he had requested.

BOOSTER AWARD

S. E. Carlson (AOPA 47033) recently won the AOPA Booster award for bringing 11 new memberships into AOPA.

AOPA awarded Carlson an identification bracelet for the first 10 new members. The eleventh man starts his second booster record.

WHEREVER YOU FLY—

The Flying Red Horse Flies With You!

DEPENDABLE NATIONWIDE—

Why Accept Anything Less?

YOU FLY with confidence over toughest terrain when your plane is powered and protected by famous Socony-Vacuum Aviation Products . . . outstanding choice of aviation pioneers since the Wright Brothers' first flight. Start now to safeguard engine performance with high-quality Mobiloil Aero! Get full take-off, climbing and cruising power with Mobilgas Aircraft! Insist on the best. Why accept anything less?

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Signs of Safety and Performance . . .

AT OVER 1,000 U.S. AIRPORTS

CIVIL AIR PATROL

WING TALK

HEADQUARTERS AND HEADQUARTERS SQUADRON
CIVIL AIR PATROL-UNITED STATES AIR FORCE
BOLLING AIR FORCE BASE, WASHINGTON 25, D. C.

000.7

Mr. Curtis Fuller
Editor, FLYING
185 North Wabash Avenue
Chicago 1, Illinois

Dear Mr. Fuller:

It has been most gratifying to learn that FLYING, one of America's pioneer aviation journals, is to feature each month, beginning in July, a column devoted to activities of the Civil Air Patrol.

This is especially good news for CAP as we begin the down-the-stretch drive in our campaign to promote greater participation in the air cadet program. As you know, we hope to have at least 100,000 boys and girls between the ages of 15 and 17 actively engaged in our pre-flight training courses before January 1, 1951. This, we feel, is a worthy and challenging objective to all of us in the Civil Air Patrol. We are confident it will be attained.

I am sure that the new column in FLYING will not only stimulate our current recruiting effort but our entire program.

Sincerely yours,
LUCAS V. BEAU
Major General, USAF
Commanding

General Beau is head of the CAP and has been a flying officer for 32 years.

CAP's Mission

THE mission of the Civil Air Patrol is not to build recruits for the Air Force. It is to teach as many youths as possible as much of the science of aviation as is presently available.

Go to Summer Camp

NOW a required phase of the CAP training program, "active duty" summer camps for cadets are in full operation at some 25 U. S. Air Force bases in the United States, Alaska, Puerto Rico, and Hawaii. Underway since late June, the 1950 program calls for more than 4,000 cadets to complete the two week course during the summer months.

This year's encampment program is the most elaborate attempted. At most bases, groups of 10 to 15 cadets will go aloft in C-47's (*Skytrains*) for one- to two-hour orientation flights. At other stations, the cadets will get their flying time in C-45 aircraft.

On the ground training schedule are 80 hours of instruction in such subjects as military training and drill, aircraft familiarization, aircraft and engines, parachute packing, chemical warfare, Link trainer, small arms firing, flying safety, navigation, traffic control, crash procedures, Morse code and radio.

National Headquarters recently ruled that cadets cannot get a certificate of completion for CAP's general two-year pre-flight training courses until they attend at least two summer encampments.

International Cadet Exchange

A FAST flying overseas visit to Italy and Portugal in May by Maj. Gen. Lucas V. Beau, CAP commander, and Gen. Carl Spaatz, Chairman of the CAP National Executive Board, may have paved the way for those countries to join with England, France, and Switzerland in the annual International Cadet Exchange with the United States this summer.

Although the two CAP chiefs had not returned to this country and the results of their mission were not known at the time the July issue of FLYING went to press, informed CAP sources in Washington were predicting that the two European countries would accept.

CAP members attend to "injuries" of cadet in simulated crash at Long Beach.

Seek 100,000 Cadets

AN enthusiastic recruiting campaign to enroll 100,000 cadets (boys and girls from 15 to 17 years of age) in the CAP pre-flight training program by December, 1950, is "moving along very well," according to Maj. Freeman Bishop, CAP public relations chief. Bishop reported, in May, that the mid-year goal of 50,000 cadets was "well in sight" at that time.

Young people interested in the CAP program are invited to contact their nearest CAP unit or to write to National Headquarters, Civil Air Patrol, Bolling Air Force Base, Washington 25, D. C.

Drill Teams Compete

CAP's three outstanding drill teams meet at Dallas, Tex., July 29, to compete for the National Drill Championship and a chance to represent the United States in the annual drill competition with the top team of Canada's Air Cadet League August 30 in Des Moines, Ia.

The trio of contenders for the national title will have won regional contests held earlier this month at Barksdale Air Force Base, La.; Hill Air Force Base, Utah; and Mitchel Air Force Base, N. Y. Each of CAP's 54 wings is eligible to enter a team in the regional contest.

A strong favorite to repeat, New Jersey's crack marchers won first place last year.

Cadets learn Link Trainer operation during 1949 summer encampment in Tenn.

Wing News

USING a sailplane donated by E. J. Reeves, President of the National Soaring Society, 10 lucky cadets of the Dallas, Tex., Wing are taking soaring lessons in the only CAP class of its kind. Goal is to have one man ready for a solo flight during the national soaring meet scheduled for Dallas next month . . . The popular flying band leader, Vaughn Monroe, is the latest entertainment star to join CAP. Monroe received an honorary captain's commission from Col. Pride Ratterree, South Carolina Wing Commander, during a recent visit to Charleston . . . Another radio-TV star, Arthur Godfrey, holds an active CAP commission as a captain in the Frederick, Md., Squadron . . . During 1949, CAP pilots logged nearly 10,000 hours on search and rescue missions flown at the request of the Air Rescue Service and other agencies . . . The first VHF radio relay over the Sierra Nevada Mountains from Nevada to California, a jump of 220 miles from Reno to San Francisco over 8,000 to 10,000-foot peaks, has been claimed by Lieut. Col. Arthur Sowle, communications officer of the Nevada Wing . . .

New Ag Plane

(Continued from page 34)

Donated by the manufacturer, the engine costs only about two-thirds as much as a radial. However, the plane itself will be built so a radial can be installed if the owner prefers it. The engine has high-pressure carburetor.

Since the plane will be used mainly for dusting, Weick made an extensive investigation of the field. He decided that dusting equipment would have to be redesigned. The Department of Agriculture, cooperating with Texas A&M and the CAA in designing the craft, assigned an expert to work out a new type of dispersing equipment. The engineer, O. K. Heddon, expects to have an improved system by fall.

Hoppers will be plastic-coated, easy to wash out. And synthetic rubber bags will be used for gas and certain spray materials.

The plane's dusting and spraying jobs also dictated the open-cockpit configuration. Dust is hard to see through and a closed cockpit would be as full of fog as a bottle of bourbon.

Most farmers use their planes on small fields—and sometimes those fields are wet and muddy. That means that the small tires found on many personal aircraft would be inefficient. So the new agricultural plane will be equipped with extra-large tires.

Weick is working with limited funds; $50,000 is not much money for the complicated job of designing and building a new plane. But much help has been given by the CAA and the Department of Agriculture, both of which are vitally interested in the project. The Department of Agriculture has furnished an expert on fertilizers and the CAA has assigned two engineers to the project.

Private industry is also giving concrete help—and keeping its eyes open. Aeronca sent a project engineer to Texas A&M. Cessna donated its spring landing gear—and an engineer. McCauley furnished a one-piece all-metal prop. The American Seating Company has given an inertia reel-type shoulder harness, and the Patushin Industries consigned an Air Force jet-type seat, able to take 40 G's.

All these contributions will be incorporated in the plane which is scheduled to fly in Texas in the fall.

Other design details, however, have not yet been revealed by the Personal Aircraft Research Center.

One thing's certain: Weick hopes his job won't be finished when the agricultural plane flies this fall. He'd like to continue development, working on various new types of equipment for distributing agricultural materials.

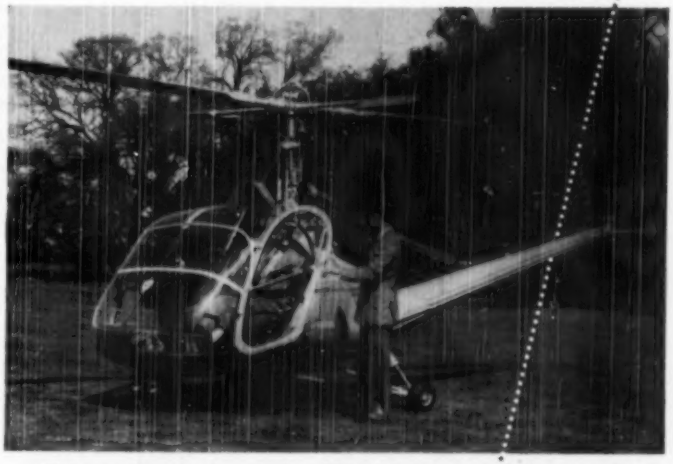
Even if this particular design is not produced and marketed, Weick believes the data he's gained in developing the plane will be of substantial help to aircraft manufacturers and to dusting and spraying operators.

America's Flying Farmers look upon the project as their baby, and they are waiting eagerly to see how the youngster turns out. END

World's Largest Manufacturer of Commercial Helicopters *presents...*

The *new* 1950 **Utility** Hiller 360

The *new* 1950 **Executive** Hiller 360



Higher performance; increased useful load; lowest priced helicopter; only basically stable helicopter; lowest insurance rates of any helicopter.

Hiller Helicopters.....

PALO ALTO, CALIFORNIA

Bellanca Cruisemaster

(*Continued from page 29*)

The cabin interior is larger too, but the most outstanding feature exclusive of performance is the equipment included as standard and the gingerbread that adds to comfort and eye appeal.

Cruisemaster standard equipment includes hydraulic gear and flaps, a complete set of flight instruments, engine instruments, VHF transmitter and receiver, range and broadcast receiver, 75 mc. marker beacon receiver, rotatable loop, cabin heater and ventilating system, instrument, navigation and landing lights. And if all that isn't enough, it includes a choice of three color combinations: blue exterior with beige and gold or blue interior; red exterior with green interior; or yellow exterior with beige and wine interior. Seats and upholstery are genuine leather and airfoam and the cabin is soundproofed at no extra cost. All exteriors are hand rubbed to a high gloss.

The *Cruisemaster's* price is $9,500. (The *Cruisaire* minus radios, hydraulic gear and flaps, controllable prop, and with smaller engine delivered for $6,950.)

An extra 25 gallon gas tank costs $95 installed, and a set of five flares costs $150 installed. The extra gas tank is mounted in the baggage compartment and increases the *Cruisemaster* range by about two hours. It is a gravity flow installation and provides a safety feature in case of fuel pump failure although a hand wobble pump is included in the plane as standard equipment.

Although I flew the *Cruisemaster* on a cold and blustery day, the cabin heater kept the plane warm and comfortable. In fact, at one time it became too hot and the windows steamed up a little. Instead of cutting down on the heat I tried the ventilators and found them efficient. Two side vents give air inlets alongside pilot and co-pilot's knees while the pilot's window has a small section that may be opened if desired. The rear seat position does not have window vents.

The hydraulic gear and flap system are new. The gear lever is shaped like a wheel and the flap handle resembles an airfoil. This tends to prevent the all too common error of mistaking the gear for the flap lever or vice versa.

Bellanca may have to modify the hydraulic reservoir location. I had difficulty raising and lowering gear and flaps without resorting to the emergency hand pump. Clarence Chamberlin who is now in the advertising and sales departments at Bellanca told me that he had installed a small hydraulic reservoir against the fire wall in one *Cruisemaster* and that this higher position (the original installation is under the floor) provided fast positive gear and flap action without having to use the hand pump.

BELLANCA CRUISEMASTER

One Lycoming 190-h.p. engine
Type Certificate 1A3

Wing span	34 ft. 2 in.
Length	23 feet
Height	6 ft. 2½ in.
Empty weight	1,525 lbs.
Gross weight	2,600 lbs.
Wing area	161.5 sq. ft.
Wing loading (at gross weight)	16.09 lbs./sq. ft.
Power loading (at gross weight)	13.68 lbs./sq. ft.
Top speed	190 m.p.h.
Cruising speed (75% power at 6,000 feet)	180 m.p.h.
Stalling speed (with flap; full load)	43.6 m.p.h.
Maximum range	680 miles
Rate of climb (at sea level with full load)	1,400 f.p.m.
Service ceiling	22,500 feet
Baggage (with full gas and four pass.)	198 lbs.

Source: Bellanca Aircraft Corp., New Castle, Del.

I also had difficulty entering and leaving the plane. One door is located on the right side of the *Cruisemaster* and it opens not only the side of the plane but a portion of the cabin ceiling. I am a big man, over six feet tall and weigh more than 200 pounds, and I found it easy to enter or leave the rear seat. I managed to get in the front seat without stepping on seat cushions or splitting the seat of my pants, but there is lots of room for improvement here. It might help if the right front seat would slide or fold back out of the way. Once inside the plane, four six-footers sit comfortably and the backs of the two front seats are adjustable for maximum comfort.

Pilots who have read Bellanca's claims for this plane ask many questions.

Will it climb 1,400 f.p.m. with full load? Will it cruise at 180 m.p.h.? Does it land as slow and cruise as far as they say it does?

Performance-wise, the *Cruisemaster* rates with the best four-place planes. It will get off the ground with full load in 10 seconds from a standing start and will climb to 5,000 feet in less than four minutes. It will indicate 165 m.p.h. at 2,000 feet at about 75 per cent power but the true speed won't get up to 180 or more unless you get on upstairs to 5,000 feet or higher.

I watched a Bellanca test pilot take off and land in not much more than the 200-foot width of a runway. Even with a strong breeze blowing (30 m.p.h.), that's real short-field performance.

I found that the plane stalls at about an indicated 40-45 m.p.h. with power on or off and with gear and flaps retracted or extended, and the stall characteristics are good with a nose straight ahead recovery. The Bellanca glides nicely at 90 m.p.h. and touches the runway at about 50 m.p.h.

Flaps can be stopped in any position and can be checked for position either directly or by the indicator located at the lower left side of the cockpit. The plane lands well with flaps either up or down or in between. Gear checks down and locked by a throttle horn, dashboard lights and pins on either wing.

Cruising range is good with the two 20-gallon wing tanks filled and is excellent with the added auxiliary tank installed. The 190 h.p. Lycoming burns approximately 12 gallons per hour giving a range of well over 500 miles with four passengers and nearly 200 pounds of baggage. At higher altitudes a lean mixture and higher true air speed could increase the range to almost 700 miles.

Everything considered here's how I feel about Bellanca's new *Cruisemaster:* In performance it rates with the best on the market. Its standard equipment is better than the extras offered by some of the plane's competitors. It's comfortable to sit in but hard to climb in and out of. The hydraulic system needs some improving and so do the dashboard warning lights. The mixture control needs a safety switch so that it cannot be pulled out accidentally. The plane looks beautiful, especially in the air—and it handles as well as it looks. END

"No, no, Jenkins, you're being torn apart by a cumulo nimbus—not cumulo nimbi!"

Puttering That Pays

(Continued from page 24)

cracks. Check the cylinder head around each plug for stains indicating a leaky plug gasket. Check the condition of high tension spark plug wires, and their attachment to the plug. Much engine power can be dissipated by these seemingly unimportant defects. When some of the high tension current leaks off through wire insulation or plug porcelain cracks, you get poor combustion in that cylinder with a tendency to run hot.

Next, examine the engine mount. If it is a tubular mount, check each tube for alignment and dents. Wipe away all oil and grease deposits and check for longitudinal tube cracks. Examine each weld carefully. You can't repair such defects yourself, but it's up to you to discover them and call them to the attention of a licensed mechanic.

Examine the prop before leaving the front of the plane. Has the varnish coating been ruptured by a scratch—or has it been punctured by flying pebbles, thus leaving the raw wood exposed to the weather? If so, a touch-up job is in order. Moisture entering through these punctures may affect glue strength and cause separation of the propeller laminations. Has the fabric been chewed by rain and gravel? If there are a lot of loose threads and jagged little holes, apply a couple of coats of clear dope. It will help prevent deterioration until the blade ends can be recovered.

Maybe there are some sharp nicks in the metal edging around the blade ends. Smooth them out with a piece of emery paper. If it's a metal prop, examine the entire blade area for nicks and scratches. Round them out gently, using emery paper, but be careful not to remove too much metal. If you take off too much, it'll affect propeller balance. If there's a bad nick or dent, call it to the attention of a mechanic. Such nicks in metal cause stress concentrations that may eventually result in blade failure.

Before leaving the prop, check its track by thrusting a stick in the ground with the upper end just clearing the blade tip. When the other blade is turned into position, it should clear the stick by the same amount.

Sometimes you'll notice a small scratch in the windshield. Use fine sandpaper, wetted, and round out the scratch. Use a circular motion while sanding, and do not go deeper than necessary. Finish with a very fine grade of wetted paper, then polish the area with a plastics wax.

Landing gear and tires should come in for some attention. Give them a cursory pre-flight inspection prior to every take-off—but spend a worthwhile hour or so now and then giving them a thorough onceover. Examine all welds and tubular structures for cracks, dents or other defects. Note the condition of the shock cords. Examine the tires carefully and look for small cuts that may be deeper than they appear. Remove sharp pebbles embedded between the treads.

A coating of rubber-preserving tire paint now and then will prevent rubber

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MISSILE GUIDANCE SYSTEMS
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U. S. AIR FORCE

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VISIT YOUR NEAREST AIR FORCE BASE OR U. S. ARMY AND U. S. AIR FORCE RECRUITING STATION

LOGGING TIME

WITH HY SHERIDAN

Captain, American Airlines

QUICK, HENRY, THE FLIT!

The airliner was sitting on the loading platform and although passengers were aboard, since this was an intermediate stop, Sadie was energetically spraying the interior of the cabin. A curious passenger asked her, "Why are you spraying the cabin with such verve and dash?"

"I hate 'em," she said. "I hate 'em. I heard the pilot say to the engineer just a few minutes ago that there were still a lot of bugs in this airplane."

* * *

MOSTLY ABOUT SADIE

Most passengers, being members of what is laughingly called *homo sapiens*, have only about three things that they are intellectually (sic) interested in, and one of them is the speed. One passenger asked Sadie, "Are we making good time?"

"Well, we are not making any," she answered. "But we aren't using up much."

* * *

One of the inexperienced passengers, called "new riders" in the trade, asked Sadie, "How does the pilot know where he is going?"

"By the radio," she said. "He can always ask."

* * *

The gabby passenger asked Sadie, "What does an airline pilot have to look out for the most?"

"On this line," replied Sadie, "for himself."

* * *

A FAST ONE

Sadie was buying a sun-suit, so she asked the clerk, "Do you think this suit will run?"

The clerk looked at it. "Well," she said, "it had better."

* * *

You can tell if a girl is fast, Sadie says, by her pickup.

* * *

AIN'T SCIENCE GRAND?

Scientists have succeeded in photographing falling raindrops, and they have found that raindrops are not shaped like raindrops at all. They seem to take any old shape they happen to think of. Well, your modest reporter knew that long ago. He was way ahead of them then, and he still is.

I used to jump parachutes, and I jumped one time in a rain, and because we were falling at about the same rate, the raindrops and I were sitting up there side by side where we could study each other. The raindrops had all kinds of shapes, all right, but there was something even more interesting. They sat there, so help me, and wiggled.

* * *

The trouble with a blind date is that you are not blind.

* * *

FAMOUS SAYINGS

That gave me quite a turn.
—Pilot upon recovering from a spin.

* * *

OH, MY ACHING FEET

Some of our new electronic calculators are something to reckon with. A new one being set up at Oak Ridge is a marvel, they say, but the one in the Bureau of Standards is no slouch. It can do, they tell us, 10 months' calculation in 10 seconds, and the scientists are going to put it to work to see if it can make a decent weather forecast, which would be an astonishing advance indeed. But that is too much to expect. Weather is just too complicated for such devices.

Just the same, one of these days some homely genius who has not been trained to think in a rut will invent a mechanical corn.

* * *

THOSE SAUCERS

There is only one way to account for the persistence of the flying saucer rumors. "I've had to take it for ages," says Dame Rumor. "I ought to be able to dish it out."

* * *

The difference between animals and mankind is that the animals are satisfied with the horrors that nature provides.

* * *

CHICKEN A LA KING

Just before take-off, Sadie brought the load sheet and other papers to the cockpit and the pilot asked her what the meal was going to be like. "Oh," she said, "the same old stuff; you know, chicken a la cling, lionized potatoes, and some of that consummated soup."

"Well," the pilot sighed, "that's better than those clubbed sandwiches we got on the Convairs."

* * *

No man can foretell a woman or the weather. They both put on a front.

* * *

The ladies may set the styles but your modest reporter is hot-footing right behind them. I am wearing open-toed sox this season.

* * *

EPITAPH

His maps our Willie never took—
Our Willie was a case—
"I know this country like a book."
One day he lost his place.

oxidation and prolong tire life. Wipe all grease and oil from the tires, as grease causes rapid deterioration of rubber.

Many pilots ignore possible deterioration of metal parts in the airframe structure. There's some excuse for this oversight: we're all used to autos and tractors where each part is many times stronger than required by normal loads. A little rust—a nick—or a dent—doesn't matter. But in aircraft, where weight-saving is important, engineers design each part to minimum stress requirements. This means that weakening caused by rust, corrosion or mechanical injury places the part in a questionable category insofar as safety is concerned.

The pilot who is tinker-bent can accomplish some constructive preventive maintenance work by going over the fuselage structure in a thorough and painstaking manner.

Note places where protective surface finishes have been rubbed or corroded away and mark them for a touch-up job. Examine all structural tubing for alignment, and for cracks, dents or mechanical injury. Check all welds for soundness. Test safetied nuts for tightness; and if they are loose, check for elongated bolt holes or badly worn bolts before tightening. Check the control cables, bell cranks and pulleys for wear, clearance and tendency to bind. Swipe each control cable full length with an oil-soaked tack rag.

In touch-up refinishing work on metal, two definite problems arise: (1) removing and neutralizing any corrosion that has occurred; and (2) refinishing the area to prevent further corrosion. It's wasted energy to paint over a corroded spot without first cleaning away all evidence of corrosion. The corroding chemicals, trapped under the paint film, will continue their nasty work; and in a short while, the new paint film will be destroyed by chemical action.

Aluminum is one of the most common aircraft metals—and when it starts to corrode it requires special attention. First, clean the corroded area with a scraper or wire brush. Clean to bright metal, but don't remove more metal than is necessary. After cleaning, swab the area with a five to 10 per cent solution of chromic acid and water. This will neutralize corrosive chemicals, and will remove any microscopic grease film that may prevent adhesion of subsequent paint jobs. Next, rinse the area with clear water, then follow with two coats of zinc chromate primer. Of course, these instructions apply only when the corrosion is superficial. If deterioration has progressed until there is doubt concerning the strength of the part, let a mechanic look at it.

Another condition that causes aluminum to corrode rapidly, especially when moisture is present, is when it is in direct contact with another kind of metal. Each metal has an electrical potential of its own, and when it contacts another metal with a different potential, a minute electrical current flows between them. This small current flow causes what metallurgists call "electrolytic corrosion." The metal with the highest potential corrodes most rapidly, and as both aluminum and

magnesium have very high potentials, they corrode rapidly when in contact with iron or steel.

To prevent this electrolytic corrosion, joints between aluminum or magnesium and iron or steel are insulated by applying a coating of zinc chromate between the faying surfaces. But during use of the plane, a joint may become slightly worn and the insulating film may be rubbed or abraded away. The owner should inspect all such joints periodically, and if there's any evidence of corrosion, it should be corrected immediately.

The way to do this is to loosen the joint just enough so the faying surfaces can be sprung apart. Slush the joint thoroughly with zinc chromate primer, using a thin brush to work it between the slightly parted contact surfaces. After the coating has dried (it requires but a few moments) reassemble the joint and safety the nut. Then apply a second coating of the primer over the entire joint area. Engineers readily admit that many structural failures are directly traceable to electrolytic corrosion of metals in critical, highly-stressed joints.

Mechanical injury to a metal structural part, especially if the injury is a sharp-bottomed nick or scratch in a highly stressed part, demands immediate attention. As previously mentioned in connection with prop blades, these sharp-bottomed nicks or scratches cause stress concentrations every time the part is deflected under a normal load. In time, this alters the crystalline structure of the metal and may result in failure.

To remedy this situation, grind away the scratch or nick, leaving a rounded and shallow depression. A medium-grade cutting paper may be used for rounding out the injury. Finish with a fine grade of paper that will give the metal a high luster. Wash the area thoroughly to remove all emery dust, then protect it with a couple of coats of zinc chromate primer.

As a last reminder: Give your instruments an occasional check. The fuel gauge can be tested by simply "sticking" the gas at several different levels. Then compare the amount shown on the stick with the reading on the fuel gauge. This will leave you with a mental picture of the amount of gas in the tank every time you glance at the gauge.

Airspeed indicators can be checked by flying a straight course at constant speed between check points on the ground that are a known distance apart. If possible, this should be done on a still day, to offset any difference between air and ground speed.

Altimeters can be given a rough check by comparison with another plane flying at the same altitudes; or by comparing readings taken at airports of different altitudes. These comparisons, however, are of little value in compensating a sensitive altimeter.

It's pretty obvious by now that the pilot who likes to putter need not waste his time in aimless tinkering—in taking things apart just to see what makes them tick. Spend the time doing preventive maintenance that will save you money and increase your plane's safety. END

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Aunt Hanna

(*Continued from page 23*)

and equipment. Preliminary feelers through old friends in the *Luftwaffe* quickly disclosed that they were completely and thoroughly disinterested in the idea. But Hanna wasn't the kind to be easily discouraged.

Having many friends in high places, she finally managed to corner Feldmarschall Erhard Milch of the RLM—the German Air Ministry. Milch immediately declared the plan to be impractical, impossible, and besides that—it wouldn't work. For old time's sake, however, and after considerable pleading and cajoling, he finally agreed to kick the idea upstairs—and arranged for a complete presentation of the plan to the German Academy of Aeronautics which had the power to call in various scientists, technicians, and experts on military tactics.

A meeting was arranged by the renowned Dr. Walter Georgii who, with a group of experts, thoroughly reviewed the proposal and the suggested tactics and equipment.

They declared the plan to be operationally sound!

In fact, they recommended that the Messerschmitt Me-328 fighter be used since it already existed but had been something of a disappointment in its preliminary flight tests for use as a first-line combat plane. They also suggested that a 2,000 pound bomb-torpedo be used and that the plane be steered into the water at such an angle that the torpedo would explode directly under the keel of the ship. The plane was expected to be shattered by the impact, killing the pilot instantly, but allowing the torpedo to tear loose and continue under water to the ship where it would explode with a time fuse set off by the impact of the crash.

With the approval of the Council behind her, it looked as though Hanna's brainchild might be allowed to grow up. It was now a case of selling the idea to Hitler himself and after pulling enough strings, a three-hour interview was granted at Berchtesgaden on February 28, 1944.

This was a great moment and Hanna gushed out the Valkyrian idea to the brooding Fuehrer with conviction. She was doing rather well, they say, until in a final effort to pin down the desperate need for such a plan, she made the mistake of pointing out that unless something drastic was done, Germany would lose the war. A direct quotation unfortunately is not possible, but apparently the Fuehrer blew up at this point and the interview was abruptly ended. He later simmered down enough to give her grudging permission to continue the planning, but emphatically stipulated that the suicide group wasn't to be used until he gave the order.

With this dubious left-handed support, Hanna managed to lay the matter before General Korton, Chief of Staff of the German Air Force. While poo-pooing the whole idea, he nevertheless was forced to take it over. He appointed a staff officer, a Colonel Hegl, to handle the project and Goering was advised of the whole thing at this point when the paper work came across his desk—moving, apparently, from his in-basket to the out-basket to the waste-basket. Colonel Hegl, at the time, commanded *Kampf Geschwader* 200 (Combat Air Wing 200), which did spy-dropping, intruding into Allied bomber formations with captured Allied planes, etc.

Spurred on by this casual support, the suicide group increased as a result of Aunt Hanna's motherly maneuvers to some 70 or 80 men by the spring of 1944. Recruiting was select and purely on a volunteer basis. A pledge was drawn up and signed by the members reading "I hereby volunteer as a pilot of the manned glide-bomb. I am convinced that this action will end with my death."

In other respects, however, the project moved slowly through bureaucratic red-tape and indecision and only the obviously sincere idealism that prompted Hanna and the others to form the organization kept things together. Colonel Hegl, of course,wasn't a signed-up member of the suicide group but the more he toyed with the idea the more he liked it—for the others. After all, if the venture proved successful he would enjoy the reflected glory and probably could wangle most of the credit for organizing it. But now—sinking ships! Surely there must be something better to do with all these fine upstanding Nordics who were so willing to die for the Fuehrer. In fact, one of Hegl's staff officers spent most of his time thinking up alternate missions—such as blowing up ammunition trains on the Russian Front.

At any rate, the Me-328 was prepared for testing. It was a small but extremely fast single-seat fighter-bomber and was originally to have been powered with two buzz-bomb motors. For use as a suicide glider, however, it was to be launched in mid-air from a cradle on the upper wing surface of a Dornier-217 bomber and dived to the target at a speed of over 450 m.p.h. Flight tests carried out at the Horschung Airfield near Linz, Austria, demonstrated its suitability and in April, 1944, all tests were completed on the tactical version. *Gothear Waggon Fabrik* was selected to mass-produce them but unexplained difficulties delayed delivery of even the first model. It was obvious that official disinterest was threatening the success of the whole project.

Then someone decided that the V-1 Buzz-Bomb could be modified for testing in a matter of weeks. In fact, in a frantic 14 days after the go-ahead was given they had the first modified V-1 with cockpit and controls installed. Within three weeks, no less than four versions were completed—single and two-seater unpowered trainers with landing-gears, and single-seat powered tactical versions without landing-gears. It was believed that the V-1 would be an excellent machine since its diving speed would be so great that anti-aircraft fire would be relatively harmless. (Perhaps so, but Japan's *Baka* bombs which were patterned after Hanna's V-1's didn't fare so well.)

Hanna expected to fly the V-1 herself, but the *Luftwaffe* assigned two of their own pilots. Both crashed uninjured on their first flights. On the second, however, they were both seriously hurt. Hanna was then allowed to try but after some dozen successful flights—some at speeds of over 500 m.p.h.—she was forced to give up due to injuries received in a Berlin air raid. A sergeant was then assigned—and was killed. The word suicide was no misnomer.

The first test flights, like the later training flights, were made without power. The V-1 was carried aloft by a Heinkel-

15 YEARS AGO

FROM the July, 1935, issue of this magazine:

New addition to Japan's air force, the Kawasaki Army Type 93 bomber "followed the modern tendency to enclose

the crew." Top speed of the "high-performing" twin-engined plane was 136 m.p.h. and ceiling was 16,400 feet. It was armed with machine guns and carried eight tons of explosives.

Liberty engines, famed for their long record of service (over 17 years), were scheduled for retirement.

Benito Mussolini, "proud of the fact that he is an expert pilot, is profoundly interested in aviation and makes a practice of taking the controls whenever he travels by air."

Buzzing and illegal acrobatics caused the death of 23 pilots during the last six months of 1934.

Pursuit planes [Boeing P-26's] were pictured with this comment: "It seems

almost impossible that planes roaring over the terrain at speeds approximating 200 m.p.h. could keep in such perfect alignment . . ."

"Sensational new fuel" — 100 octane gasoline — was being tested by the Army Air Corps. Experts stated that it would "bring the 500-mile-an-hour mark within the realms of possibility."

TWENTY YEARS AGO

First place in the $100,000 Guggenheim Safe-Aircraft Competition was won by the Curtiss Wright *Tanager*.

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BETTY SKELTON'S NOTEBOOK

SEEING DOUBLE

When I talked to him, AL BRUNER (Greensboro, N. C., tower operator) was still shaking his head.

A radio call had come in several minutes before: "*Ercoupe* 93384 requests emergency single-engine landing clearance, one engine out."

Bruner muttered: "One engine out on an *Ercoupe!*—who does he think he's kiddin'?"

Just then, the plane came into view, Bruner blinked. "I'm seeing double!" he moaned.

He was. GRADY THRASHER of Elberton, Ga., was landing in his *Siamese Ercoupe*, an aviation freak that has astounded most of the tower operators in the South. Grady built the double-take model by bolting two conventional *Ercoupes* together—removing the right wing from one plane and the left wing from the other.

He wound up with a plane that has two fuselages, two cabins, two landing gears, three rudders (only two work at a time)—and a profile similar to a Lockheed *Lightning*.

Wingspan is 37 feet, empty weight 1,550 pounds and stalling speed with power off 60 m.p.h. Grady has flown the *Siamese* over 250 hours, covering 30,000 miles—and he even loops and rolls it at exhibitions.

For cross-country, the neat four-placer cruises at 120 m.p.h., has a 3½-hour range fully loaded, and a 15,000-foot service ceiling.

"Only one drawback," says Grady. "This plane's made me a marked man. When I fly over my home town, all the bill collectors rush out and meet me at the airport!"

UNSTABLE MABEL

. . . Latest cause for amazement on the West coast is a tiny "vest-pocket" glider patterned after the supersonic Bell X-1. Owned and piloted by 52-year-old ROY CUSICK of Big Bear, Calif., *Unstable Mabel* is a pretty heavy little piece of dynamite—it weighs 305 pounds and often hits 250 m.p.h. in dives. To quote Roy: "I'm old enough to know better!"

It took almost a year to build the midget stunting glider with welder TEX HENDRIX doing a lot of the work. Cost was $1,250, exclusive of labor. Spex are: span 14 feet, length 15 ft. 6 in., wing area 43 square feet, wing loading 10.5 pounds.

Mabel has flaps, a tricycle landing gear and JATO brackets. The cockpit measures only 20 inches wide at the shoulders. Glide ratio is 10 to 1 at 100 m.p.h. Snap maneuvers at 140 m.p.h. (registering 6½ G's on the accelerometer) are done with slight movement of stick and rudder, being vicious and hard to count. There is no stall warning and Roy says she does come in a *little* hot.

Mabel may be *Unstable* but Roy loves her like a baby . . .

The Chattanooga Fliers Club seems confident that this year's National Pilots Air Meet and Races in Chattanooga (July 14-15-16), will be the largest air event they've ever had. Transient pilots flying in for this show are always treated royally. Don't bother to bring shoes along . . . the Barefoot Ball held after the show is a riot!

WOW!

BEN HUNTLEY of Charlotte, N. C., is buzzing around the East these days in his new aerobatic special, the only one of its kind in the world, which he very appropriately named *Sampson*. Designed and built by midget-builder Curtis Pitt, the king-size biplane is a powerhouse with wings. Its climb from take-off for the first minute is 4,750 feet. Powered by a 450 h.p. Pratt and Whitney, the plane cruises at 160 and has a top speed of 200 m.p.h. After his first flight, Ben exclaimed, "Wow! It's just like being in a saddle on the way to the moon!"

Betty Skelton

111 bomber in the same way the unmanned V-1's were launched against England after the launching sites were overrun and destroyed by the Allies. The landings were extremely dangerous and were made at high speeds and at a steep angle of descent; after all, the V-1 wasn't designed to be flown with a pilot, much less landed! And with the heavy engines installed, flight was even more dangerous. It turned out that the vibrations of the intermittent buzz-bomb motor simply shook the airplane apart—the first inkling why some 30 per cent of the V-1's landed in the Channel instead of in England.

An aiming device was developed which would allow the pilot to gauge the size and submerged depth of a ship and indicate the exact spot where he must hit the water in order to have the bomb continue under the ship and blow it up. Specially colored smoke was developed which sky-writing pilots laid down in the air in the shape of various types of ships while V-1 students made practice dives. All in all, the project was progressing rather well and it looked like the group would be ready in a relatively short time.

About this time, however, the upstairs support which had fluctuated from outright disinterest to studied apathy, finally gave out altogether. The members of the group were shunted aimlessly from airfield to airfield, spending most of their time in physical training—setting-up exercises and pistol firing.

Hanna herself was so discouraged by this lack of clear-cut support that she wangled an interview with Himmler to see what could be done. Himmler had heard vague rumors of the project from time to time but was frankly aghast at the idea of sacrificing healthy young Germans for the job and suggested that criminals and those incurably sick should be used instead. They could then, he pointed out, by this grand gesture be assured a place for all time on an honor "scroll" of the German nation. He probably had in mind a wooden headstone. At any event, he promised positive support—provided his suggestions were accepted. Hanna couldn't see it this way, so nothing came of the interview.

About this time the invasion of France took place and neither the Me-328 or the V-1's were ready. Hanna was heartbroken and felt that the suicide-squadron idea now had no further useful purpose. With the invasion successful, however, Uncle Hermann Goering suddenly remembered he had a suicide squadron somewhere—and why weren't they out committing suicide? Colonel Hegl hastened to rectify this oversight.

This turn-about in official interest rather astounded the group since they had nothing to fly.

Without consulting Hanna, Hegl came up with the idea of using standard Focke-Wulf-190 fighters. The idea was to load a 4,000 pound bomb aboard—or hang it around the airplane somewhere—he was vague on details, and take off and run into something. The Focke-Wulfs were to be ready in 14 days!

There were, however several small technical details that hadn't been completely ironed out yet. For example, no

one had ever flown a Focke-Wulf fighter with a 4,000 pound bomb strapped to it—and no one even knew if the tires and landing-gear would support such a weight.

There was also the question of available runways—preferably extra long runways—with a convenient junk pile at the end. No one had the slightest idea whether a Focke-Wulf could stagger off the ground with such a load!

Hanna was highly aroused at this turn of events and saw Himmler again—who took the story to Hitler. Hitler must have been having one of his more rational moments at the time, because he immediately called the whole thing off. He wanted his suicide pilots to wind up under boats—not in ignominious heaps at the end of runways.

A more normal but highly accelerated training program was then started. The first step involved enough basic flight instruction to allow them to at least get the Focke-Wulf off the ground—without the bomb. It was still suspected, however, that someone upstairs was betting that a Focke-Wulf (with a normal weight of only 8,600 pounds) could lug a 4,000 pound bomb off the ground.

This suspicion was further strengthened when a Major Semper, chief of staff to Colonel Hegl, tore up the original pledges and passed out new ones. These read, "I hereby volunteer as a suicide pilot of any aircraft my superiors select. I am convinced that this action will end with my death."

This slight change in the contract on working conditions would have caused a sit-down strike had they had time to think things over—but they weren't given time.

The organization was immediately split into two groups—a small one with Lieutenant Lange and about 10 men was shipped to another field. The larger group remained behind. After a day or so, this group was told that Lange and his men had signed the pledge—while actually they had refused to sign. Out of loyalty the larger group of some 60 or 70 men then signed. Lange's group was transferred to the 9th Flying Corps, a regular fighter-bomber group, as pilots on Focke-Wulfs. Each had received a sketchy primary course in flying and had made one practice bomb run—with everyone, it is said, missing the target completely!

Hanna hit the roof at this sad state of affairs, and with the help of a high ranking General, had Colonel Hegl replaced by a Colonel Baumbach, a popular and experienced combat pilot. He immediately scrapped the 4,000-pound bomb idea and the Focke-Wulfs, and he and Hanna were finally able to have the organization dissolved and the men transferred to other outfits.

The originator of the idea herself thus was the one to kill it when it became obvious that the time for such a venture had passed and that the men would be sacrificed uselessly on some pet plan of higher authority. It was then the spring of 1945; Germany was falling apart rapidly and the war was over in a matter of weeks. Thus ended Aunt Hanna's ill-fated *Kamikaze* plan. END

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Salesman

(*Continued from page 31*)

the plane into Denver if satisfied.

If the owner has correctly represented its condition he receives a check in immediate payment. Vest doesn't like to haggle.

He says that no one actually knows what a used plane is worth and most people want more than they can get. All he wants is a small margin and a large volume. He usually loses money on five planes of a new model before he finds what he can afford to pay. But on the sixth plane he'll have his margin of profit established.

Obviously, Vest prefers dealing on lower margins with the most popular models. "The more buyers you've got for a new plane," he says, "the more you've got for the same model used plane." He believes that price is a secondary factor. But obviously Vest is selling more used airplanes than any other dealer because he is selling them at the lowest over-all costs, in addition to doing a good job of merchandising.

That's also true in the new and used parts division operated by Eddie Dyer in partnership with Vest. Here's a sample: the old *Ercoupe* outfit hit bad weather just in time to turn down 1,000 new tires and tubes. Firestone was stuck with them and Vest bid them at 10 cents on the dollar. He got 'em.

They'd be a bargain at 40 per cent of list price. But Vest sells one, or a dozen, for $6 apiece, per set. That's about one-fifth of regular list. Vest thinks he could sell them just as easily at $12 each but he'd be storing them a while longer.

For prices like that, people regularly call long distance from as far as Mexico City, Newfoundland and Alaska for rush orders. Shipment is guaranteed in 24 hours and all crating is done free. If you don't think that's an item, try crating a *Cruiser* wing some day, or even a *Wasp* propeller.

Vest, in turn, gets fantastic bargains. Perhaps a man lists his plane with a local operator for $2,500, and runs a few ads at that figure. But there aren't any takers. One guy in Alabama writes saying he'd like to see it. But the owner in Montana can't fly the ship to Alabama on spec, and the Alabaman isn't interested in the trip costs to Montana for a plane that is marked for sale at the highest possible price.

Finally the guy's wife says, "Get rid of that airplane." He makes a quick once around the valley asking $2,250, but it is winter time and there are no takers. He then calls Vest and Don says bring it in, we'll give you a fair price. The guy lands at Denver to find a plane just like his on the line for sale at $1,875. He takes $1,600 and goes home unhappy as hell. Yet, he'd have been damned if he would have sold the plane at home for even $2,000 while he had time to look around for a buyer.

By the same token, some buyer can now get the plane for $1,790 or $1,825, plus the $50 delivery fee back.

Vest says: "Our prices are not set by me or Eddie Dyer or anyone here. The guy who comes in through that gate and buys that particular plane right there is the man who sets the rate we will pay for the next one just like it. Only the buying public knows what a used plane is worth, and it's worth just what they will pay for it within 30 days of its arrival here. To hell with what it might be worth next summer. If we buy in December, we are buying for a January sale, not the July market. We buy in June for the July market, and obviously we pay more."

Customers are kept advised of Vest's stock by a rotation of mailings through a list that totals 5,000 potential buyers; 500 "Buyer's Lists" are turned out every day and mailed to each group in turn down the customer lists. Thus it takes a couple of weeks to fulfill the cycle and get fresh data in each buyer's hands. The lists are corrected to price and stock each day.

An example of the reliability of this kind of business in what is presumed to be a still unstable field is best shown by Vest's April records. He was open for business in March of 1946 and the April business that year totaled $8,000 gross sales. He lost $300 on the proceedings. April, 1947, shows $11,000 worth of sales and a net profit of $800. April, 1948, saw Vest sell $36,000 worth of used planes for a profit of $4,000. And, in 1949, that "tough" year in aviation, Vest sold $127,000 worth of airplanes in April and netted $17,000 on sales alone.

In 1950, with prices rising and better conditions all the way around, his early sales were better than ever before and it looks almost certain that 1950 will run about 50 per cent more business than did 1949.

In 1949, $70,000 worth of money was financed—meaning that about $140,000 total was purchased by people who wanted to buy on time. Most of them chose to pay an extra 10 per cent on the balance due and thus get an insurance waiver on the money. This waiver provided that if the plane was wrecked the buyer could either rebuild at his own expense or ship the wreck back to Vest prepaid; and relieve his obligation.

FLYING

"According to the map, we're about an inch and a half from Fresno!"

Both categories wound up with a profit for the 1949 accounts and hence the more liberal terms of the 1950 contracts—40 per cent down and 15 months to pay.

How did Don Vest get this way?

He was a bright young star in the used car game during the depression. He set himself a 10-year plan to retire and in 1942 after 10 years in used cars in Denver, he retired and bought a lightplane to fly for fun. He was then 32.

He wound up in the Army Reserve Corps as a WTS flight instructor and decided by 1946 that he had retired too young. Vest tackled the used plane market because it was virtually untried and unknown.

He is still experimenting with the finance side of the business. He has placed test sales all over North America to see how low he can accept a down payment and how long he can run a contract before the repossessions get out of hand. Future finance business will be based on these tests and the results of the 1950 program.

Vest needs at least 10 times the storage space and shop space he has at present and hopes within the near future to move to a better location within a radius of 600 miles of Denver.

When flight instruction was popular three years back he merchandised it like he merchandises his sales and service now. At one time John Curry, his flying school partner, had 140 G.I. students, 12 instructors and 17 airplanes in action.

At the same time, Eddie Dyer's shop was grossing up to $7,000 a month in service and repairs with a dozen full time employes.

As the early boom died down they shifted to other fields. Dyer still employs up to 20 men but they are in the parts business to the tune of about $20,000 a month with shop work down around $2,500.

Some of their best used parts stock comes from the ability to buy disaster stuff from insurance adjusters.

For instance, in Amarillo last year a twister put 20 airplanes out of action and Vest bought the remains. Some marginal stuff was literally junked and sold as scrap. But some of the planes were almost new and not too badly hurt. The damaged parts were destroyed and the rest of the airplanes were dismantled and placed into the stock parts supply. Hence you can buy a $150 gyro instrument out of an almost new *Navion* for $25, an Aeromatic propeller in perfect shape for 20 per cent of list, the tail section of a *Bonanza* for a fraction of what it costs the factory to make them, and so forth.

Marginal stuff is always dismantled. Vest has been criticized as a man who "doesn't do much work on those planes he sells."

But Vest buys planes to sell, not to work on. When they need much work he puts Dyer's wrecking crew on them and tears them apart. There's money in the parts business, too. He has no room to store junk airplanes. Vest's motto is, "We sell 'em, not store 'em." END

$1400 Lightplane

(*Continued from page 25*)

F.A.F. price ($1,400) and they set about planning the basic design so it could also be sold as a home construction kit. The original simple design was simplified even more. Back yard models are now beginning to take shape. More than 100 sets of complete design plans have been purchased by small groups of French students and amateur pilots at $15 per set. At least 30 Bébé-Jodel sportplanes are now flying and two factories are turning out the first manufactured models.

GENERAL. The *Bébé-Jodel* has been designed around an engine of limited power. Prime consideration has been ruggedness, simplicity of construction and ease of maintenance. In one case a stunting pilot crashed from an altitude of 25 feet. He walked away unhurt and the *Bébé-Jodel* itself was back in the air a few weeks later. One of the reasons for this is the stiff French Air Ministry contract requirements (Certificate 2004B) which demand a load safety factor of 9G.

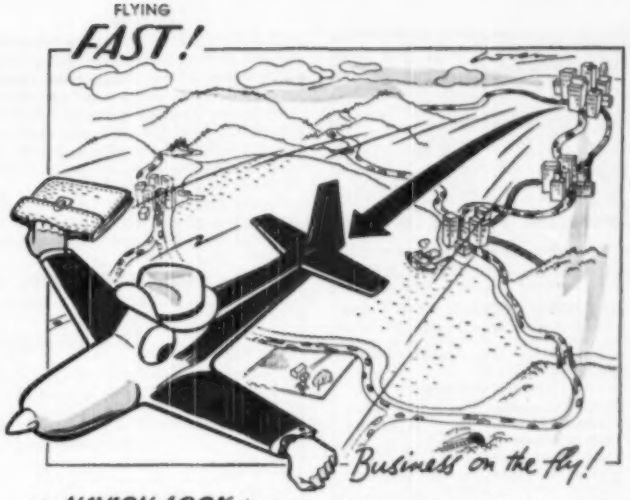
CONSTRUCTION. The *Bébé-Jodel* is of all-spruce construction with heavy fabric covering. It is of cantilever monocoque conception with conventional landing gear. There is no fixed vertical fin—the large rudder is hinged to the tail king post by steel bolts. The fin is not necessary because the area of the slab-sided fuselage is sufficient for directional stability.

WING. The cantilever mainplane is built around a plywood-covered box spar. The three sections (center and outer panel) are joined together to form a single permanent structure. Extra strength is gained by using a heavy moulded plywood leading edge. Internal webbing supports for the main spar are placed parallel with the widely spaced ribs, separated by false leading-edge ribs. The outer section of the wing has generous dihedral for greater stability in flight. The entire wing is bolted to the fuselage by five steel bolts. Ailerons are cable-controlled. Entry to the cockpit is by means of a plywood wingwalk. Though the *Bébé-Jodel* has no flaps, the landing speed is 31 m.p.h. for the production version and the landing run less than 200 feet.

FUSELAGE. The fuselage is of plywood and monocoque construction, slab-sided, with a semi-circular top coaming. Gasoline capacity is 7.2 gallons, oil 1.2 gallons. The tanks are forward of the roomy cockpit. Standard instrumentation includes airspeed, turn and bank, tachometer, and altimeter. Compass and engine heater are optional. So are extra fuel tanks, enclosed cockpit cover, wheel pants and extra instrumentation. Normal control column is employed with separate foot pedals but a wheel-type column can be fitted if desired.

LANDING GEAR. Tires are large diameter. The main legs are of simple rubber-damped design conceived by Monsieur Delemontez. Wheel discs are of moulded magnesium. Tailskid consists of three layers of high-tensile steel.

ENGINE. The first prototype was fitted



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with a 25-h.p. Poinsard air-cooled engine but production models will be powered by a converted German automobile engine—the 25-h.p. *Volkswagen* run at over 3,000 r.p.m. An experimental version has the 35-h.p. ABC Scorpion. For comparative performance, note the accompanying table. The plane has a fixed-pitch wooden propeller and a plywood spinner.

FLIGHT CHARACTERISTICS. French pilots report "exceptional flying qualities" and say that the *Bébé-Jodel* is a "gentle" plane with no harsh vices. It is hard to put into a spin and recovers immediately. With no wind the *Bébé* stalls at 25-28 m.p.h. and its short landing and take-off requirements make small-field operation practicable.

Avions Jodel is already considering producing a two- or three-place lightplane, based on earlier shelved models, and the French Air Ministry has ordered two prototypes of a two-seat trainer—the D-11 *Jodel-Cadet*. Both are ready for flight-testing. The first prototype differs little from the *Bébé-Jodel*. It has side-by-side seating, enclosed cockpit and is powered by a 45-h.p. Salmson radial engine. The second prototype is powered by a 75-h.p. Minie horizontally-opposed engine. The *Jodel-Cadet* is also aimed at the private pilot and kit plans will be made available. Development is likewise underway on a three-seater, the *Jodel-Club*, and two prototypes are to be built. The manufacturer reports that all these prototypes are expected to be flying this summer.

With typical French enthusiasm, other new projects are taking shape on the Jodel drawing boards. There is a four-place cabin touring plane, and a baby jet-propelled lightplane. MM Joly and Delemontez have proved the success of their formula—enthusiasm backed by sound common sense and practical experience. The *Bébé-Jodel* provides the evidence. END

THE BÉBÉ-JODEL AND ITS SISTER PLANES

	D-9 (Bébé-Jodel)			D-11 Jodel-Cadet	D-10 Jodel-Club
	One-place 25-h.p. Poinsard (Prototype)	One-place 25-h.p. Volkswagen (production)	One-place 35-h.p. Scorpion (Experimental)	Two-place 45-h.p. Salmson	Three-place 75-h.p. Minie
Wing Span	22′ 11½″	22′ 11½″	22′ 11½″	26′ 10¾″	28′ 6½″
Length	17′ 6½″	17′ 10½″	17′ 8½″	20′ 6″	21′ 7¾″
Wing Area	96.84 sq.ft.	96.84 sq.ft.	96.84 sq.ft.	136.65 sq.ft.	145.26 sq.ft.
Aspect Ratio	5.45	5.45	5.45	5.3	5.6
Weight (less engine)	216 lb.	216 lb.	216 lb.	374.8 lb.	.....
Empty Weight	315 lb.	357.3 lb.	352.8 lb.	595.3 lb.	683.6 lb.
Fuel Weight	44.1 lb.	44.1 lb.	44.1 lb.	99.2 lb.	.....
Useful Load	222.5 lb.	222.5 lb.	222.5 lb.	463.1 lb.	727.7 lb.
Gross Weight	537.8 lb.	579.8 lb.	575.3 lb.	1058.4 lb.	1411.3 lb.
Wing Loading	5.6 lb.	5.8 lb.	5.8 lb.	7.8 lb.	9.7 lb.
Load Factor	9G	9G	9G	9G	9G
Top Speed	93.8 m.p.h.	93.2 m.p.h.	106.3 m.p.h.	106.3 m.p.h.	115.6 m.p.h.
Cruising Speed	71.5 m.p.h.	80.8 m.p.h.	93.2 m.p.h.	96.3 m.p.h.	99.4 m.p.h.
Landing (no wind)	29.2 m.p.h.	31.0 m.p.h.	31.0 m.p.h.	40.4 m.p.h.	37.3 m.p.h.*
Maximum Range	248.6 miles	275.9 miles	248.6 miles	329.6 miles	571.7 miles
Landing Run (no wind)	229.7 feet	196.8 feet	229.7 feet	.....	.....
Take-off Run (no wind)	180.5 feet	361.0 feet	131.2 feet	246.0 feet	361.0 feet
Rate of Climb	492 f.p.m.	413.2 f.p.m.	787 f.p.m.	531 f.p.m.	472.3 f.p.m.

*With flaps.

180,000 Spotters

(*Continued from page* 15)

margin in case of sickness or personal emergencies.

In scouting the 25 states for likely candidates, the network organizers are skipping men in the most active military age groups. They'll be mobilized too quickly in event of war. Instead, women and older men will be asked to serve.

They'll get a handbook titled "Instructions to Observers" now being prepared by the National Defense Department. They'll also get lapel pins (brooches for the women) and pass-cards signed by the commanding general of the Continental Air Command and countersigned by the state governor or his representative. They won't be paid—but would receive medals for outstanding service in emergencies.

The spotting stations are surprisingly simple in their organization. In the atom age, when electronic equipment and complicated radio and radar facilities are taken for granted, America's spotting network will be equipped with a familiar tool: the ordinary household telephone.

Each lookout in the vast ground observation system will be within easy reach of a phone. At telephone company switchboards, these phones will be marked by special caps. Switchboard operators will be briefed on priority for the key phones.

When the system springs into life, all phone companies will be alerted. They'll watch for messages from the 9,000 lookout stations—messages beginning with the electric words: "Airplane flash!"

When those words come over the line, operators will instantly connect the posts

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with "filter centers" established in key towns where telephone lines converge.

At these centers, basic facts on aircraft formations will be rapidly sifted—and a pieced-together account will be flashed to the nearest Air Control Center.

At that moment, the Air Force takes over. Air Defense Control Centers will alert fighter-interceptors—and the planes will be in the air within short minutes of the initial spotting.

The most important member of the crews will be the "filterer" or evaluator. He'll have to be a man trained in military aviation tactics, able to untangle conflicts and eliminate errors. For example, he's likely to get reports of a previously undetected formation over, say, northern Wisconsin. But he'll have to be capable of piecing together from fragmentary reports the fact that some planes had broken an earlier reported formation, and were heading in a new direction. He can't accept assumptions of on-the-spot lookouts.

Cost of establishing the network won't be great. The Federal Government will pay for the cost of renting and equipping filter centers (located in towns where at least 500 volunteers are available). These centers will have a special-type switchboard, plotting tables with huge maps marked off in segments, and "plotter stations" with earphones. Plotters, standing around the map, will move miniature planes as reports flash to the center.

An entire filter team will include switchboard operators, plotters, filterers and tellers, the latter to relay a coordinated account to Air Defense Centers. About 20 to 25 persons will man a filter center at one time, and it's estimated that 500 volunteers will be needed to assure continual round-the-clock operation. Air Force instructors will train the crews.

Uncle Sam will pay the cost of phone calls from spotters to filter centers, and other costs directly connected with the center operations. The Government will also underwrite the cost of an entirely separate air raid warning system, hooked up to special telephones in police stations, fire stations and other locations where personnel are constantly stationed.

The warning system will be used only when an enemy air fleet has been spotted, and alert signals are advisable for key centers along the formation's probable path.

Each of the "warning" telephones will be equipped with red, yellow, blue and white lights. If the red light ignites, it means just one thing: "Duck! They're on you!" Yellow will be the warning for a "possible" flight of enemy planes; blue will mean such a flight is probable. And white will be the all-clear signal.

The Air Force has put its spotter-network map on the restricted list. But very roughly, it covers New England and the Atlantic Coast down to North Carolina, the Great Lakes States and the West Coast. States covered entirely or in part are the New England states, New York, New Jersey, Maryland, District of Columbia, Delaware, Fennsylvania, Ohio, Virginia, North Carolina, Indiana, Michigan, Illinois, Wisconsin, Minnesota, West Virginia, Oregon, Washington, California and Idaho.

Air Force officials say they'll use the spotters even if, and when, the complete radar network is established. Spotters can help identify the planes, may be more accurate in counting them, can watch paratroopers dropping out, and are especially valuable for noting "on the deck" flights where radar is useless except at close range.

Formation of the giant civilian spotter army doesn't mean that war is just around the corner. But it does mean that U.S. defense planners aren't waiting for a Pearl Harbor bulletin to prod them into action. They figure that any future bombing expedition against U.S. territory will be less likely if the enemy knows the nation is ready and waiting. The Air Force wants to be sure it has that civilian army mobilized, ready to operate. END

FLYING

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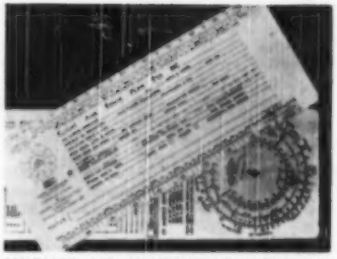

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That First Jet Ride

(Continued from page 33)

back pressure and the jet began to bounce down the runway on its nose wheel.

The yards were shooting by. At 110 m.p.h. Mac still hadn't applied back pressure to take the weight off the nose wheel. He finally remembered to haul back slightly on the stick at 115 m.p.h. He continued to add the back pressure and at 120 m.p.h. was airborne.

Highly excited, but remembering details, he retracted the landing gear. He made altitude corrections cautiously. The sensitivity of the hydraulically-boosted ailerons surprised him.

Heading out of the pattern Mac hauled the flaps up at about 180 m.p.h., noticing a slight tendency of the plane to settle. It took only gentle back pressure to counteract.

Climbing, he reduced power to 95 per cent shortly after he reached 300 m.p.h. Looking down below, listening to the wind beating against the plane, he wanted to sit back and enjoy the exhilaration of that first hop. But he had too many things to do.

At 4,000 feet, he had to jot down on a pad the indicated airspeed, tailpipe temperature, fuel pressure and rate of climb. He flipped off the "take-off and land" switch at 5,000 feet. Going on up, practicing climbing turns, he kept making notes. At 8,000 feet, he jotted down the instrument readings.

Then, at 12,000 feet, Mac leveled off. "It was about that time that I realized how swell the TO-1 really is," he says. "It seemed impossible that we'd climbed up there in less than five minutes." He throttled back to 60 per cent r.p.m. and tried stalls. They were honest and clean. But how about stalls with lowered gear and flaps—and with lowered dive brakes? It was the same story. Then he put the plane into a couple of steep turns, and tried gliding turns. "It handled beautifully," he says.

That first hour shot by. Before Mac realized it he had to head back to the field. He tried aileron boost shut-off in "off" position—and discovered that without extra help the ailerons were mighty tough to handle.

Coming in for landing, Mac was on edge. There were a lot of things to remember. On the downwind leg he was about 1,000 feet above the ground. Airspeed was 200 m.p.h. He lowered landing gear—and gave full flaps just opposite his touchdown point. Everything was going smoothly.

He ran through the landing check-off list. Landing gear was down. Emergency fuel switch was in "take-off and land" position . . . armament switches were off . . . shoulder harness was locked . . . flaps down . . . dive flaps down . . . brakes. . . . He snapped his fingers. Red lights? He double-checked. The instruments read normally—no red lights burning.

Mac figured he was doing everything perfectly. But he wasn't. His landing pattern was a little too tight and he had to bank at an unusually steep angle on that approach. He'd figured a little wrong but the tight bank lined him up.

Mac knew that most students leveled off too high and had to be reminded by the runway portable, "You're 10 feet in the air. Ease her down." He watched himself carefully, made his own corrections, and the portable didn't have to caution him.

Over the runway at 120 m.p.h. he cut his throttle to idle. He started to flair out high but then held off until he was about six feet off the deck. He felt the TO-1 touch down easily.

A grin spread over Mac's face. He held gentle back pressure until the nosewheel touched, and the *Shooting Star* decelerated slowly. He taxied back to the line and was met by Lieutenant Moore.

Even before the engine was shut off Moore hopped on the wing. "Enjoy the hop?" he asked.

"YES SIR!" Mac almost shouted.

Then, before they left the plane, Lieutenant Moore reviewed the entire hop—take-off, landing and emergency procedure.

That was it. Solo in a jet. It was the high point in McJunkin's training, just as it's the high point for every midshipman and officer who trains at the Navy's Whiting Field, near Pensacola.

Commanding officer of the Jet Training Unit-1 is a soft-spoken, red-headed pilot, Lieut. Comdr. Vernon O'Neil. "We assume students who take this course know *nothing* about jets," he says. "In the first six months, we've had only one minor accident, when we broke a nose-wheel off a TO-1. We're proud of that safety record, because our students are up there alone when they're introduced to jet flying."

To make certain that every solo pilot knows what he's doing, a rigorous pre-solo program covers almost every phase of flying the jets. Students study the plane's oxygen system, survival at altitude, effects of high G's. They also get check-outs on local operations, lectures on cruise control, classes on ground-air communications, data on landing characteristics of the TO-1 and lectures on airfoils, importance of cruise control, and instruments.

With all this, the student still isn't ready for solo. He has to study the history of jet propulsion, the J-33-A-23 engine, the mechanical operation of the TO-1. And he has to have a cockpit check-out, has to be familiar with TO-1 piloting technique. He gets a general description of the engine fuel system and fuel metering systems. And then he reviews everything—again.

That's just a beginning. He absorbs scores of facts about jet planes—and the TO-1 in particular. He must know all about emergency flame-out procedure, aircraft and engine limitations of the TO-1, emergency procedures, the TO-1's electrical system. Then he takes a blindfold cockpit check-out. And goes over the TO-1's diagrams again. And reviews everything. Then he's reviewed on instrument flight procedure, use of the automatic direction finder, and use of the manual direction finder.

He's almost ready for a jet solo. Only he has to pass an exam. This isn't an ordinary test. It contains 121 questions like the following:

"During your engine check at 100 per cent r.p.m., a small fluctuation of the fuel pressure *could* indicate that————."

"Using 100 per cent r.p.m. at sea level, the approximate fuel consumption is ———— gallons per minute."

"List the nine steps, in sequence, required to make an automatic air start."

This exam is unusual because you can't pass it by making 90 per cent—or 95 per cent—or 99 per cent. The student passes when his replies are *all* correct.

Not until the 121 answers—and hundreds more—are filed and cross-indexed in the pilot's brain, is he ready for the *big* test. That comes when the instructor pats him on the back and waves him off—alone.

END

FLAT SPINS

• WHAT ELSE?
The Los Angeles Chamber of Commerce is raising money for a marker with 97-foot letters (to be painted on the roof of the L.A. County Fair Grandstand.) Visible from 18,000 feet, it will be the "world's largest" airmarker—natch.

• STORY MAKING THE ROUNDS:
A pilot kept staring at a pretty girl who wore a small airplane around her neck. Finally she spoke up: "You like my plane?" He paused a moment. "Well, mostly," he said, "I've been admiring the landing field."

• MILTON BERLE?
Flying over flooded farmland near Grand Rapids, Mich., pilot Frank De Bane saw flashing lights in a house below. He radioed deputy sheriffs who

rowed feverishly to the scene in a special rescue craft. The amazed farmer met them at the door. "Shucks," he said, "I was just signaling my neighbors to row over for tonight's television show . . ."

• OFF WITH THE OLD . . .
Louis Wolfe, owner of a Detroit parking lot, knows one man who'd rather fly than drive. The gentleman parked his car in Wolfe's lot and hurried off to take a plane trip. Now—two years later—the car still is unclaimed and Wolfe has concluded sadly that he'll probably never collect the parking fee—over $300.

Add aviation deeds you'd rather read about than attempt: Eduardo Nasep hung by his neck from a helicopter circling Buenos Aires and calmly drank a cup of tea.

• CAUSE FOR ANGER
Its landing gear jammed, a French airliner carrying 33 passengers from South America, circled the Paris airport for more than three hours before coming in to land. During the three-hour wait, an Argentine passenger thought the end was at hand and asked his wife's forgiveness for a lot of things she had never known about during their married life. "He was very angry when the plane landed safely," she said later.

—*Harold Helfer*

Flying Saucers

(Continued from page 17)

of the accounts are more interesting and inexplicable than those described in this article, but we have confined this to only four reports.

All involve sightings by airliner crews—in each case by both pilots and co-pilots. We have confined the descriptions of saucer sightings to these four accounts because we know that airline pilots are trained observers. They are used to watching and interpreting sky phenomena and would be less likely to err in their reports than any other group we could think of.

No editor of FLYING has ever seen a flying saucer. But we adopt the position of Dr. Frank K. Edmondson, director of the Goethe Link Observatory of Indiana University at Bloomington.

"I have never seen a flying saucer," said Dr. Edmondson, "but after you discount all these explainable reports, there is a residue left that I cannot explain."

The sightings by airline pilots are part of that residue, and the strange craft that Captain Adams and First Officer Anderson saw near Little Rock last March was one of those unexplainable phenomena.

"It was about 1,000 feet above us and about a half mile away," Anderson told intelligence officers. "It zoomed at terrific speed (perhaps as much as 700-1,000 m.p.h.) in an arc ahead and above us, moving from south to north . . .

"This object remained in full view for about 30 seconds and we got a good look. It had no navigation lights, but as it passed ahead of us in an arc we could plainly see other lights—as though from eight or 10 lighted windows or ports—on the lower side.

"The lights had a fluorescent quality. They were soft and fuzzy, unlike any we'd seen before. The object was circular, apparently, and the lights remained distinct all the time it was in our view. There was no reflection, no exhaust, and no vapor trail. That's definite."

Captain Adams added that "there was a bright white light flashing intermittently from the top of the thing. The speed attracted our attention first, that and the blinking light. It was the strongest blue white light we've ever seen."

As the object passed, its underside apparently was then exposed to the pilots because the blue-white light was obscured. The object then continued in a straight line and disappeared.

"I've been a skeptic all my life, but what can you do when you see something like that?" Adams said. "We both saw it, and we were flabbergasted."

The night was so dark that neither Adams nor Anderson could detect any dark or solid outline to the object. They assume that it was circular only because the lighted "portholes" were arranged in a circle.

The two pilots told a Memphis Press-Scimitar staff writer:

"We tried not to be too fantastic in making our report. We sort of figured on the short side of everything. We never had been interested in these things before. In fact, frankly we did not believe in them.

"The thing was not a shooting star or a comet. We know a comet, and we see shooting stars between Memphis and Houston all the time."

* * *

It was 2:45 early one July morning in 1948. An Eastern Airlines DC-3 piloted by Capt. Clarence Shipe Chiles and co-piloted by John B. Whitted, was tooling along at 5,000 feet about 20 miles southwest of Montgomery, Ala., en route from Houston to New York.

The moon was bright and there were scattered light clouds. Thunderstorms had been reported en route and Chiles and Whitted were watching faint flashes of lightning way up ahead.

"We had our eyes focused on the point from which the thing came," Chiles told Louis Blackburn, of the Houston Press. "From the right and slightly above us came a bright glow and the long rocket-like ship took form in the distance.

" 'It's a jet job,' I said to Whitted.

"Then it grew larger and pulled up alongside. It appeared to be about 100 feet long with a huge fuselage three times as large as that of a B-29.

" 'It's too big for a jet, but what the devil is it?' said Whitted.

"There were two rows of windows and it appeared definitely to be a two-decker. The lights from the side were a ghastly white, like the glow of a gas light—the whitest we'd ever seen.

"There was a long shaft on the ship's nose that looked like it might have been part of radar controls. The ship acted that way too, for just after it pulled alongside us it whipped quickly upward at a very sharp angle."

Both craft veered to their respective left. The mystery ship passed about 700 feet to the right and above the airliner. "Then, as if the pilot had seen us and wanted to avoid us, it pulled up with a tremendous burst of flame from the rear and zoomed into the clouds, its prop wash or jet wash rocking our DC-3."

The wingless craft gave the impression of having a pilot's cabin at the front of a cigar-shaped fuselage. The cabin was brightly lighted but the fuselage itself approximated the brilliance of a magnesium flare.

"We saw no occupants," Chiles said. "From the side of the craft came an intense, fairly dark blue glow that ran the entire length of the fuselage, like a blue fluorescent factory light. The exhaust was a red-orange flame, with a lighter color predominant around the outer edges."

Both Chiles and Whitted agreed that the exhaust flame extended 30 to 50 feet behind the object and became deeper in intensity as the craft pulled up into a cloud. They estimated its speed as being about ⅓ faster than ordinary jets—that is, 700 to 900 m.p.h.

Immediately after the ship disappeared, Chiles turned the controls over to Whitted and rushed into the cabin to find out if any passengers had seen the object. He found all the passengers asleep except C. L. McKelvie of Columbus, O.

"I remembered saying to myself 'That's

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the queerest lightning I've ever seen,' and I pressed closer to the window to see it," McKelvie said. "I was amazed at the brilliance of the flash of light."

McKelvie realized it was not lightning when the "light" flashed past in an unbroken line to disappear in a cloud. "It was much redder in color than lightning," McKelvie said. He did not, however, see any form of a ship.

The light from the object was so brilliant, indeed, that it caused "lightning blindness" to both pilots. They had to turn up their cockpit lights to read the instruments.

★ ★ ★

Nine circular disc-like objects were sighted by a United Air Lines plane west-bound from Boise, Ida., to Seattle, Wash., on July 4, 1947—just a few days after Kenneth Arnold reported the first chain of "discs" over the state of Washington.

There had been many other reports of "flying saucers" in the northwest but most persons were skeptical. "I'll believe 'em when I see 'em," said Capt. E. J. Smith of United Air Lines Flight 105. The plane took off at 9:04 p.m. and was only eight minutes out of Boise when Smith and his co-pilot, First Officer Ralph Stevens, saw five disc-like objects in "loose formation."

At first they mistook the objects for aircraft and blinked their lights as a warning. It was a dimly twilighted sky and they could see the objects silhouetted clearly. The two pilots called Marty Morrow, stewardess, to the cockpit to certify that they were actually seeing the discs and she too saw them.

Then they caught sight of four more of the objects, three clustered together and a fourth flying "by itself, way off in the distance."

"The discs were flat and roundish," Smith and Stevens said. "They definitely were not aircraft. But they were bigger than aircraft."

★ ★ ★

The most recent "flying saucer" sighting by an airliner was on the night of April 27, 1950, when occupants of a Trans-World Airline plane en route to Chicago saw a "round glowing mass" in the air as they flew over South Bend, Ind.

Capt. Robert Adickes, the pilot, and First Officer Robert Manning had the object in sight for six or seven minutes as it overtook their plane at about 2,000 feet and cruised along a parallel course. Adickes has been flying for 13 years and has been a TWA captain for six years.

He is a cautious man and is reluctant to say that he saw a "flying saucer." To him it was an "object" or a "guided missile."

"I had just had my dinner and was wide awake," says Adickes, "when this object flew alongside. It was definitely round, with no irregular features at all, and about 10 to 20 per cent as thick as it was round. It was very smooth and streamlined, and glowed evenly with a bright red color as if it were heated stainless steel. It was so bright it gave off a light. It left no vapor, no flame. It appeared to fly on edge, like a wheel going down a highway.

"I went back to show the passengers. Most of them saw it but they couldn't see it as clearly as we [pilot and co-pilot] did because cabin lights were on and their eyes weren't adjusted to darkness.

"I called South Bend air traffic control and asked if they had any record of unusual craft in the vicinity. They didn't."

Adickes banked north in an effort to get a closer look. "It appeared to be controlled by repulse radar," he said. "As I'd turn toward it, it would veer away, keeping the same distance.

"When I turned directly toward it, it took off at a speed judged to be about 400 m.p.h., twice my speed. It went down to 1,500 feet and streaked out of sight northward over South Bend."

Adickes had talked with other pilots who claimed to have seen strange sky phenomena before he saw the object over South Bend. He is careful to say that he did not see anything that could not be explained by physics, radar, or known aerodynamic principles. He examined it as well as he could and even opened the cockpit window on the right side so that he wasn't looking through glass. Because there was nothing to compare it with he hesitates to estimate its size or distance, but compares it in size and color with an orange about 20 feet away.

"It looked something like a spinning exhaust, all aflame," said Passenger Jacob Goelzer. Another passenger, C. W. Anderson, an International Harvester plant superintendent from Springfield, O., said "It looked like a big red light bulb, fading off fast. It was moving very fast. I didn't notice any details of the red ball."

★ ★ ★

There is a surprising correlation in all these four sightings. There is the feeling by several pilots that the objects are under a kind of repulse radar control. In the two seen closest there appear to be lighted openings or "portholes."

All the objects have been seen at night, except the United Air Lines group which was seen at twilight and showed no lights. Otherwise, all objects are associated with lights, two of them with exceptionally bright white or blue-white lights, and also with softer fluorescing lights.

Three of the objects were round and disc-shaped. The fourth, that of the Eastern Airlines pilots was cigar-shaped—yet it is obvious that a disc seen on edge throughout its flight would also look cigar-shaped. None of the three disc-shaped objects showed any evidence of reaction propulsion. That of the cigar-shaped object did.

The attitude of scientists everywhere is in almost universal agreement—there are no such things as flying saucers. It is a striking fact that astronomers and physicists universally discount their existence on the grounds that they are hallucinations, but that psychologists are inclined to credit them on the grounds that they cannot be hallucinations.

Dr. Harlow Shapley, director of Harvard Observatory, says: "No evidence that flying saucers are other than natural neurotic phenomena has been received at the Harvard Observatory."

Dr. I. S. Bowen, director of Mt. Palomar

and Mt. Wilson observatories says: "We have not observed objects in the air that could not be explained as natural phenomena." And Dr. Robert H. Baker, professor of astronomy at the University of Illinois in Urbana declares: "I would say it's hysteria. I never saw a saucer, and know of no astronomer who has."

Among physicists, Dr. Arthur Jaffee an atomic scientist of the University of Chicago, suggested: "Maybe the people who see things have motes in their eyes." Dr. James Arnold, former Manhattan Project worker and a chemistry professor at the University of Chicago: "There's no evidence. People can see a lot of things—some real and some caused by the power of suggestion."

And here's what Dr. Erwin Angres, a psychiatrist replied: "Pilots, who are trained observers, are not going to be fooled very often. There may be something to the stories."

There is a striking similarity between the attitude of scientists and newspapers toward flying saucers, and toward man's first attempts to fly.

People simply would not believe that the Wright Brothers had flown. The most important reason they would not believe it was that they had been told by scientists for years that heavier-than-air flight was impossible. Dr. Simon Newcomb, the distinguished astronomer and the first American since Benjamin Franklin to be made an associate of the Institute of France, declared just a few years before the Wrights flew that flight without gas bags would require the discovery of some new metal or a new unsuspected force in nature. Rear Adm. George W. Melville, then chief engineer for the U. S. Navy, proved convincingly in the *North American Review* that the attempts to fly heavier-than-air craft were absurd.

During 1904 and 1905, the Wright Brothers conducted numerous experimental flights at Simms Station, eight miles from Dayton. They flew from Huffman Field, alongside the interurban line, and people who watched the flights from the interurban cars used to flock into the *Dayton Daily News* office and demand to know why there was nothing in the newspaper about them.

Dan Kumler, city editor, explained in 1940 why they didn't publish the stories. "We just didn't believe it. Of course you remember that the Wrights at that time were terribly secretive."

He was asked: "You mean that they were secretive about the fact that they were flying over an open field along the interurban line?"

Kumler hesitated and replied, "I guess the truth is that we were just plain dumb."

All the evidence suggests that orthodox scientists don't believe there can be such things as flying saucers because they don't behave in accordance with the conventional physics they know—just as the Wright Brothers plane did not accord with the physics of Simon Newcomb and therefore couldn't exist either.

FLYING does not have any secret sources in the Government who are able to give us confidential reports on how the saucers are powered, and who is behind them, such as one national magazine has published.

We are convinced that they have nothing to do with the Chance Vought V-173 configuration pictured on the cover of FLYING, nor with the Chance Vought XF5U (*Flying Pancake*) as stated by another national magazine. Only one of each of these airplanes was ever built, and the XF5U never even flew. The V-173 did fly but had no performance comparable with that attributed to the mysterious objects described here.

We do not believe that the saucers are a Soviet development. If the Russians did have anything so revolutionary they would hardly risk their secret by conducting training flights over the United States.

Are they then a United States development?

Airline pilots and businessmen pilots who do a lot of flying, and who talk with pilots who have seen strange objects in the sky, generally believe that they are. But if so, note these contradictions:

1. If they are indeed a secret U. S. development, that secret has been better kept in peacetime than the atomic bomb was in wartime.

2. They seem to involve a revolutionary type of fuselage, of flight theory, and also perhaps even a revolutionary type of propulsion. This seems to be the reason the physicists questioned do not believe they exist. The editors of FLYING keep well abreast of late aviation developments and know of no airframes or power plants, atomic plants included, that perform as these objects are reported to perform.

3. Like the Russians, it hardly seems likely that U. S. researchers would be experimenting with the saucers at random spots all around the country where there would always be the danger of their secrets becoming known.

4. The Government itself does not just evade answers on flying saucers. In every case it denies they exist. While certain denials are to be expected, it seems to the FLYING staff that the type of denials are fairly conclusive.

Before Project Saucer was "officially" terminated it reported that "no definite conclusive evidence is yet available that would prove or disprove the possibility that a portion of the unidentified objects are real aircraft of unknown or unconventional configuration."

This, it seems to us, is an evasion. Even taking the four reports cited here, it is obvious that skilled pilots, trained observers of sky phenomena, saw *something*. If they saw it, it must exist. They are not all victims of hallucinations despite the ready explanations of the physicists.

But what the strange phenomena are, the editors of FLYING do not pretend to know.

We can only say what they are not. They are not anything the glib radio commentators and the sensational magazines say they are. They are a mystery and a contradiction, and we know little more about what they are than when we started our investigation. But it's been interesting, hasn't it? END

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Born to Die

(Continued from page 21)

reputation of being above average in aptitude and skill and had no record of previous reckless or illegal flying. No one thought he would pull a buzz job, but he did. And apparently no test would have revealed that fact.

Psychologists know that when a man has one accident he is more likely than average to have a second one, and after a second he is more likely to have a third. But that seems to be about as far as they can go at present. Most psychologists at last seem to have decided that nearly all accidents are, indeed, *accidents*.

The reason the buzz-boys have accidents is that they are buzz-boys. They take chances at low altitude. If anything goes wrong they are dead pigeons because they have no chance to recover. The slightest miscalculation means death.

One afternoon in January, 1949, Ledel Clayton, a farmer of Shaw, Miss., was cutting wood back of his house when he noticed an Aeronca flying down the railroad tracks just a little above the wires. "When he got to the general store across the tracks from my house he made a dive at it," Clayton later told the accident investigator.

"He turned away from the store in an easterly direction, then turned and came west alongside the store and flew under the electric wires and pulled up to go over the telegraph wires in a steep climb. The engine was popping some. He climbed to about 50 feet and then nosed down. He was in a vertical dive when he hit."

James Clyde Martin, a student pilot, and Clyde Sims, both of Boyle, Miss., were killed in this unnecessary crash.

Out at Pierpont, S. D., John Jay Otis, 30, a commercial pilot, should have known better when he buzzed in a Fairchild PT-26 with Alfred Tastad. They took off south from the strip at Pierpont which runs north and south, circled the airport, buzzed the strip north to south, pulled up after crossing the south end of the strip, and levelled off. Then, at an altitude of only 200 feet, they completed a snap roll to the right.

It appeared to witnesses that the plane was partially stalled at the completion of the snap roll. Apparently it started to nose over progressively until it reached an angle of 45° downward. It continued straight on into the ground.

Buzzing is the most lethal kind of airplane accident because there is no chance of recovery. The figures are terrifying.

Forty-four per cent of buzzing accidents are fatal—compared with only 7½ per cent of other accidents. Buzzing accidents are six times as death-dealing as the average accident.

More than half of the fatal buzzing accidents killed innocent victims—bystanders as well as friends and relatives of the show-off.

Of 9,253 accidents reported to the CAB in 1947, 518 were caused by buzzing. Nearly half of the 518 crashes killed one or more persons, while many other persons were seriously injured.

Practically every airplane involved in a buzzing accident was washed out. Of the 518 buzzing accidents in 1947, 435 planes were destroyed and all the rest were "substantially damaged."

Here's what happened in the 267 fatal buzzing accidents in 1948.

Kind of Recklessness	Number Accidents	Number Fatalities
Stalled	152	249
Collision with objects	39	60
Collision with ground	38	56
Collision with other aircraft	4	11
Exceeded stress limits —pulled off wings	1	1
Intoxicated pilot	33	53
Total	267	430

Of course, buzzing may not kill you if your license is suspended or revoked before the law of averages catches up with you. In 1947, the Civil Aeronautics Board suspended the pilot licenses of 347 buzzers. The CAB itself cannot send you to jail for such violations, but more and more states are beginning to prosecute buzzers. Jail terms are becoming increasingly common.

One student flew low over a park where many children were playing. He executed dives, banks, steep climbs, pull-outs and steep climbing turns at altitudes of 10 to 200 feet from the ground. He flew so close that one child hit his plane with a hunk of clay. After about 30 minutes of this insane behavior, two other planes appeared and persuaded the pilot to land. His student certificate was revoked and he was forbidden to fly for two years. It seems like a light penalty.

"I was running my boat at low speed alongside a cabin cruiser," testified Allen Walda, Fort Wayne, Ind. "This plane 'buzzed' over us. Being so low he couldn't clear the trees ahead of him. The pilot rolled the plane over and suddenly it dropped, bursting into flames as it hit the water. . . ."

Paul D. Eyster, Angola, Ind., gives more details of the accident. He is a commercial pilot and could interpret what he saw. The Ercoupe first entered shallow dives which took it within about 25 feet of the lake's surface. There was a series of long gentle dives and zooms, climbing to an altitude of 250 feet. "Then the pilot engaged in a series of violent dives and zooms, the maneuvers being centered along the north shore of the second basin of Lake James," Eyster said.

"These increased in violence until the airplane became completely stalled in a nose-up position at approximately 250 feet altitude. The pilot did a left wing-over and in diving to regain speed did a 270° turn to the left before striking the water at approximately a 70° angle."

In the crashed plane were Walter J. Bockman of Decatur, Ind., and his passenger, James Lawrence Valerius, Grafton, O. Walda raced to the scene in his boat, and with the help of two men who had run down the beach lifted the men into the boat and rushed them across the lake to a dock. An ambulance took them to Angola. Both died.

How can we get rid of the buzz boys before they get rid of themselves?

To some it may be a superfluous question. Their attitude is that it might be a good idea just to let them continue to exterminate themselves. Eventually, it can be argued, the inexorable process of evolution would eliminate them because so few live long enough to reproduce themselves. But that would take a long time. For instance, compare them with chickens on the highway. Comparatively few chickens get killed by automobiles on the highways any more even though automobiles travel much faster than formerly. It took 25 generations or so, but eventually the accident-prone chickens were pretty well killed off by cars.

The trouble with this view is that 25 generations of human beings is a long time, and in addition, a few humanitarians argue that the buzz-boys should be saved from themselves. However that may be, it is certain they should be saved for the good of aviation.

Buzzing gives aviation the bad reputation of being full of hot rocks. Every flat-hat job adds a few enemies to the close-in airport, and tends to drive airports farther and farther away from the city. Buzzing makes every man's flying more expensive by reducing volume, raising transportation costs, and increasing insurance expenses.

Every pilot ought to declare a personal war against these foolish, senseless, bloody accidents.

What can you do to support an anti-buzz campaign? Support enforcement at every opportunity. Report every buzzing airplane on sight. Be willing to testify against buzzers in court. Everyone will be better off if they are driven out of aviation. That goes for them, their relatives, for you, for your operator—and for FLYING magazine too. END

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The Mail Box

(*Continued from page 6*)

uses public roads and you pay for the roads, but you don't know it; the airplane uses a field and you pay for it directly out of your pocket and you say, doggone, this costs a lot. And the auto is built in vast numbers whereas the plane is produced by hand. If autos were made by hand, I think we would find that they would cost a lot too.—H. S.

Dear Mr. Sheridan:

I read your column every month and get a good many laughs and facts from it. [However] I was quite dismayed at your recent comments regarding aluminum fuel: "This innovation means great things. We can now deliver more bombs faster and farther. Thus civilization has made another great stride."

Isn't civilization walking backwards, Mr. Sheridan?

MALCOLM GRAHAM

Darien, Conn.

● What civilization?—H. S.

Dear Captain Sheridan:

It has occurred to me that it might be a good plan to have wind socks on the approaches of airports. When coming in to land into a headwind (according to the field's main wind sock), a pilot could then notice that a distant wind sock below him was showing he was flying in a strong following wind, for the moment, in gusty weather.

Perhaps this is an old idea, or without value . . .

R. WOOD

Cherryvale, Kan.

● Having a small wind sock at the ends of the most used runways is a good idea—especially for certain fields where the wind can't seem to make up its mind where it's going. One of the airports like that is the one in Monterrey [Mex.] and they have a sock, an additional one, on the side of the field opposite from the station. While there [recently] I noted that the two wind socks did not agree by about a hundred and twenty degrees . . .

There are many fields in the mountains like that, and some of them have more than one wind sock—and some have busy repair shops. Of course, in Kansas the wind is dizzier than anywhere else on earth, and it is no strange sight, my leg man tells me, to see a piece of wind waltz right off with a house. (P. S. I was born in Kansas myself, but I blew.)—H. S.

Dear Mr. Sheridan:

In your April column you commented that jet aircraft will soon be going around the earth as fast as the sun does. Then, in regard to the pilot who takes off at noon and lands back where he started at the same time, noon, you asked: "It's tomorrow for the people where the pilot lands back at, but what day is it for the plane's pilot?"

I think for the plane it would be a Sunday, yet for the pilot it would just be Sat-a-day. If the pilot made the same flight in the opposite direction, he would fly through night twice while making the 24-hour flight. Thus, for the pilot it would be Two's-day, but for the plane it would be Fly-day . . .

CHARLES J. LOBDELL

Marion, Ind.

● If the pilot keeps on flying in the opposite direction for a while . . . he will soon come to the time when some national leader will get scared and start using the H bomb. That will be Fry-day.—H. S.

THE UNPARDONABLE SIN

You have committed the unpardonable sin! Imagine such a well-written magazine saying a blimp travels "55 knots per hour" [page 16, May FLYING].

HENRY WAYNE FRAZER

Urbana, Ill.

● FLYING's nautical terminology was all tied up in knots. Webster (and any old sea dog) will tell you a knot is a nautical mile per hour. Sentence should have omitted the "per hour." Corrected, it reads "55 knots."—ED.

Swarmer

(*Continued from page 18*)

D-Day, intelligence indicated that Aggressor's air force had been reduced to one squadron of F-84's. This gave the U.S. a 7-1 margin over him.

The military strategists believed this would be enough to permit the airborne assault. On D-Day 40 Fairchild C-82 and 45 C-119 troop carrier planes brought over nearly 4,000 paratroopers from the 82nd and 11th airborne divisions for two mass jumps. Supporting equipment such as 105-mm. howitzers, jeeps, jeep trailers and ammunition loads was also dropped. Later, about 3,500 men from the airborne divisions were brought in by transports with their equipment, including tanks.

Forward air controllers jumped with the paratroopers and helped direct tactical airplanes against enemy strong points surrounding the captured landing fields. They were pilots with radios on their backs who understood the possibilities and limitations of close support. This aerial artillery eliminated more than one of the tanks which are so dangerous to paratroops.

Calculations of the Exercise were based on the assumption that the 3rd Infantry Division had been brought in by air. Since the shortage of troop carriers made that impossible, the presence of the 3rd Division was "simulated," and the airlift was set up to supply an actual force of some 32,000 men. Altogether, the exercise involved 675 planes of all kinds and 60,000 men. About 198 transports were used to operate the airlift.

Was Exercise Swarmer successful? As usual, Aggressor was tossed out on his ear. More important, Swarmer was a good teacher. Although the official critique was not ready at press time, here are some things that Swarmer seemed to indicate:

● An air superiority of 7 to 1 is not

(*Continued on page 64*)

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(*Continued from page 63*)

quite enough. Aggressor was able to destroy 42 of the 198 transports.

• Trying to keep up with the rapidly changing needs of a combat force is an entirely different kind of airlift job from Operation Vittles. Col. T. R. Milton, chief of staff of the Berlin Airlift, said "Air Transport men are learning that tonnage is not as important as the loads needed."

• Design shortcomings of transports such as the C-54's make it extremely difficult to unload bulky equipment such as artillery and trucks. One ingenious device was a collapsible unloading ramp which could be flown in along with the cargo to be handled. Another was a small chute-the-chute, like those found in children's playgrounds, to speed the unloading of troops.

• A closer tie-in between Military Air Transport Service and the Troop Carrier Command is desirable. Gen. Lauris Norstad said that he would submit a proposal to effectuate such a reorganization.

• The Army itself needs to redesign its equipment with air transportability as a major objective.

• Operational difficulties also showed up, such as ineffective air traffic control of the transport planes converging on the landing strip and a seeming lack of coordination between the USAF carriers and the Army soldiers being moved.

• A dilemma was noted on using jet aircraft for air cover. The transports they were covering flew at only 6,000 feet where the fuel consumption of jets is high. If the transports could have operated at 20,000 feet, where the jets are most efficient, the same cover could have been provided by only one-third the number of jets.

Due to all causes, the airlift operation into the airhead by D-Day plus two was cut from 480 plane loads to 356. The tonnage was cut back from 4,395 to 2,503. There was a marked slowdown in dropping supplies by parachute. The 82nd Airborne had expected to receive 99.2 tons of supply during the initial skirmish for the landing strip but got only 45.5 tons—and these were not the most urgently needed supplies such as munitions.

Lieut. Gen. Mark Clark, Chief of the Army Field Forces, stated that neither the Army nor the Air Force is sure it has the right plane for tactical air support. Commanders generally agreed that the tactical air force needs strengthening.

Maj. Gen. James M. Gavin, the airborne expert, criticized the shortage of troop carrier planes. "We should have enough planes to drop two divisions at a time," he said. There are only two troop carrier groups now—enough to drop one regiment at a time." General Gavin believes there should be at least eight.

Ideas of airborne warfare are changing so rapidly that some Air Force and Army generals believe that paratroopers may be on the way out. They believe that, assuming air superiority—which would also be necessary for paratroop operations, the new assault type transports may be able to get the men into forward landing areas quicker and safer. END

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Photos show Mr. Iervolino at his station in a Delta Air Lines DC-6 and enjoying the beach at Miami with a friend.

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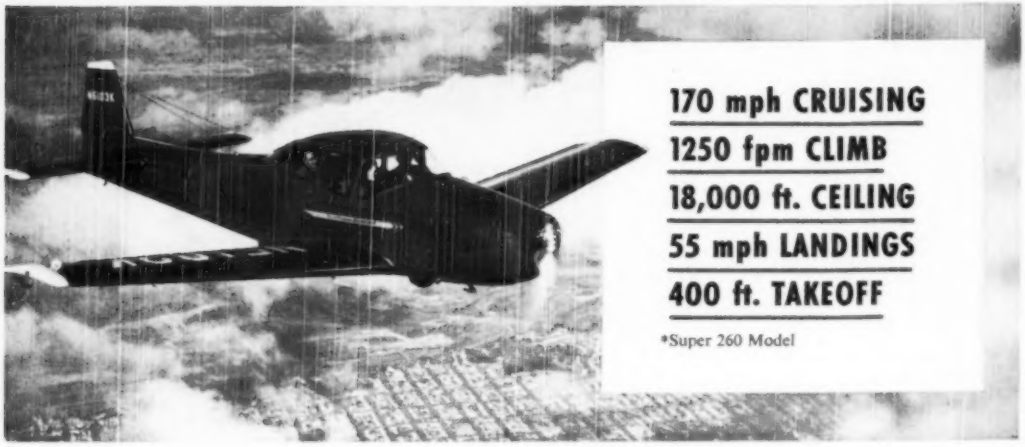

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